

T1) What is the Sensitivity of the Lodox® Statscan in Detecting Cervical Spine Injury Bony Injuries in Trauma Patients? : Hammad Khan¹, Nayla Zia¹ : 1. Accident & Emergency, Rashid Hospital Trauma Center, Dubai, U.A.E, Dubai, United Arab Emirates.

INTRODUCTION: The Statscan is a relatively new imaging modality and is a full body x ray with less radiation than traditional radiographs. This is a study to assess the sensitivity of the Lodox® Statscan in detecting cervical spine injuries in trauma patients. Previous studies have reported X rays have a sensitivity of 45-60%. Our hypothesis is that the Statscan is equally sensitive to the x rays making them redundant. **METHODS:** This is a retrospective study of consecutive patients who presented to Rashid Hospital Trauma Centre during a period of fifteen months: January 2008 to March 2009. All patients with a cervical spine bony injury detected on CT and who had also had a Statscan on the same admission were included. **RESULTS:** 70 patients met the inclusion criteria. Statscan detected only 19 of 70 (27%) patients with C spine injury. It was negative for the remaining patients (73%) but recommended CT for 2 of this group. Statscan detected 22 of the total 147 (15%) fractures. It was not better at detecting any particular type of fracture. **CONCLUSION:** The Lodox® Statscan is not sensitive in detecting C spine bony injuries and should not be used as a screening tool. Plain x rays should continue to be ordered in cases of suspected cervical spine injuries.

T2) The duration of cost-cutting effects of price-lists : Ulf Martin Schilling¹ : 1. Accidents and emergencies, Linköpings university hospital, Linköping, Sweden.

Background: It was shown that price lists have a positive impact on the cost-development at the emergency department.

In this study, we evaluated the declining performance of price lists distributed at a single time point to find the optimum schedule for recurrent intervention.

Method: Price lists including the most common laboratory and radiological investigations performed at the emergency department were created. The lists were distributed to all physicians on-call in internal medicine by the internal email-provider in April 2008. Further lists were exposed at the working stations at the ED until September 2008. The mean costs for radiologic investigations for all medical and orthopaedic patients during the baseline months of June and July 2007 and on a monthly base from June 2008 till March 2009, the percentage of radiological investigations on the number of patients and the percentage of admission were calculated. Statistical analysis was performed on a bimonthly base using the Student's T-test. Probability levels <0.01 were accepted as significant. **Results:** A total of 1442 orthopaedic and 1585 medical patients were attended to during June and July 2007. Between June 2008 and March 2009, 7987 orthopaedic and 9302 medical patients were attended. The costs for medical patients for radiological examination started to climb in December 2008, (+16%) resulting in a significant increase in February 2009 (+48%, $p < 0.001$), whilst the radiological costs for orthopaedic patients slightly increased in December (+13%, $p = 0.1$) to stabilize afterwards. Admission rates for medical patients did not differ significantly during the period investigated, whilst a decrease in admission rates for orthopaedic patients could be observed ($p < 0.01$). No significant difference in the rate of radiological investigations could be found for each line

even if a 10% increase in both lines could be observed. Conclusion: Price lists are an effective tool to reduce costs at the context of the emergency department. The effect of single interventions declined after 8 months. A repetition of interventions by price lists after a period of 6 to 8 months might be appropriate.

T3) Critical Case Simulation Innovation in Teaching Clinical Reasoning in Emergency Medicine Through Using Multiple Case Scenarios : Maria Aini¹ : 1. NY Presbyterian University Hospital of Columbia and Cornell, New York, NY, USA.

BACKGROUND: The art of Emergency Care requires elaborate skills and reasoning to support the management of multiple cases simultaneously with a breadth of acuity issues. Emergency medicine training requires a new educational model of teaching the management of critical cases synchronously. The proposed teaching tool explores a new educational effort to teaching the critical emergency medicine skill of synchronous care of multiple critical cases in simulation. **Teaching Methodology:** During a 1hr resident lecture 4 cases are simultaneously presented with vital signs; 5 minutes are given to read the cases and determine each case's acuity. An activity leader is chosen and others act as junior residents, nurses, consultants. The leader must recognize the most ill of the cases, evaluate that patient first and also must recognize the most emergent actions in each case and triage them appropriately utilizing delegation skills. The moderator acts as a guide pointing out progression of patient's critical state. A delayed or missed critical action leads to a critical failure. The leader ultimately makes his way through the cases creating an algorithm ending in ultimate patient disposition. At the end of the activity the critical actions for each case are discussed and are triaged into 3 stages based on the importance of action. Case failures are discussed as progression of case presentation towards patient instability when a critical action is missed. Finally, an appropriate algorithm of critical actions is established for all 4 cases. **DISCUSSION:** Multiple critical case presentations are an essential part of the practice of Emergency Medicine though not classically taught in a formal method. The use of critical case simulation further enhances resident teaching, participation, and confidence in the care of multiple ill patients. With increases in ED visits and increasing patient acuity, being prepared to appropriately and efficiently treat multiple critically ill patients in synchrony is an essential skill for graduating EM residents and should be incorporated in Emergency Medicine education.



Critical Case Simulation

Innovation in Teaching Emergency Medicine Thinking through Multiple Case Scenarios



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Introduction

- Traditional medical education regardless of specialty focuses on management of individual patients one at a time in sequence
- The art of Emergency Care requires elaborate skills and reasoning to support the management of multiple cases simultaneously with a breadth of acuity issues
- Emergency medicine training requires a new educational model of teaching to support the management of cases simultaneously
- Using critical case scenarios that occur simultaneously in simulation, clinical reasoning specific to the specialty of Emergency Medicine can be fully developed than by traditional models
- The proposed teaching tool explores a new educational effort to teaching the critical emergency medicine skill of synchronous care of multiple critical cases in simulation

Educational Goals

- To teach residents at all levels to identify and triage the most critical cases and actions in a multiple case scenario and asking the appropriate questions to determine the correct algorithm for synchronous patient care
- To recognize key branch points in multiple cases simultaneously altering case outcomes
- To recognize and avoid case failures, otherwise to treat progression of case failures
- To teach the practice of efficient and appropriate case disposition
- To teach senior resident level skills in leadership, independent decision-making, delegation, and ultimate responsibility

Sample Cases

Case 1-ESRD w/ critical hyperK, no IV access

85yo M No ESRD BSA w/ gem weakness
96.3 116 128/54 20 95/NRA
-nurse can't get access

CRITICAL ACTIONS

- A - EKG, 12-lead, w/ser GHS, peaked Twaves
- B - Access
- C - Tht hyperkalemia
- D - Repeat EKG
- E - Renal consult, MCU

Case 2-DKA w/ CHF

68yo F w/ r/v x 3dx
100.4 99 110/50 20 92/NRA
-FS-Chigh

CRITICAL ACTIONS

- A - EKG/serum
- B - Lung exam, O2, CXR
- C - Itra (serum/urine)
- D - Urge for ketones
- E - VGB, lytes, AG
- F - Insulin glt
- G - K repletion
- H - Stepdown Unit vs MCU

Case 3-Intrior wall STEM

55yo M c/o ep, SOB
97.8 98 90/54 20 96/NRA
-EKG shows ST elev R, II, aVF

CRITICAL ACTIONS

- A - AMI activation
- B - ACS1 tri - NO Nitro
- C - MI
- D - CXR, Heparin
- E - Cath lab

Case 4-Septic shock w/ resp distress

88yo F NH resident w/ AMS, resp distress
90.6 90 84/52 20 91/NRFB

CRITICAL ACTIONS

- A - O2
- B - Access code status
- C - IV, access, Foley, EKG
- D - Abx
- E - Steroids
- F - Pressors
- G - MCU

Synthesis of Critical Actions

Critical Actions Level 1 - within minutes of presentation

- Case 4A,4B,4C - assess airway, breathing, give O2, and determine code status, control airway
- Case 3A,3B,3C - recognize tri wall MI and ACS1 treatment, IV to maintain prebnd
- Case 1A - ask for EKG, recognize hyperK on EKG and need to treat
- Case 1B,1C - delegate need for IV access, treat hyperK
- Misc - AMPLE hx

Critical Actions Level 2 - within 1 hour of presentation

- Case 4D,4E,4F - initiate sepsis protocol
- Case 1D,1E - confirm IV access, repeat EKG
- Case 2D,2E - CXR, Heparin, package for cath lab
- Case 2D,2E,2F - recognize CHF hx before aggressive IV, VBG, ketosis, EKG for hyperK
- Misc - portinent labs, critical care monitoring

Critical Actions Level 3- within 2 hours of presentation

- Case 4G - Dispo to MCU
- Case 1F - Renal cb, MCU
- Case 2F,2G,2H - recognize and treat DKA, K repletion, MCU
- Misc - interpret labs, consults, dispo

Critical Failures Level 1

- Case 4 - resp arrest
- Case 3 - hypertension, Vth arrest
- Case 1 - GHS widening, cardiac arrest

Critical Failures Level 2

- Case 4 - septic shock, resp arrest
- Case 1 - continued hyperK cardiotoxicity
- Case 3 - cardiac collapse
- Case 2 - resp distress from fluid overload /hyperK

Critical Failures Level 3

- Misc - increased ED wait times, increased morbidity/mortality

Teaching Methodology

- During a 1 hr resident lecture 4 cases are simultaneously presented as seen on a nursing triage sheet with vital signs
- 5 min are given to read the cases and determine each case's acuity
- The activity leader is chosen and others act as junior residents, nurses, consultants
- The leader must recognize the most ill of the critical cases, evaluate that patient first but realizing that the other critically ill patients need management
- The leader must recognize the most emergent actions in each case and triage them appropriately utilizing delegation skills
- The moderator acts as a guide pointing out progression of patient's critical state. A delayed or missed critical action leads to a critical failure
- The leader ultimately makes his/her way through the cases creating an algorithm ending in ultimate patient disposition. At the end of the activity the critical actions for each case are then discussed
- The total actions are triaged into 3 levels based on timing of patient arrival to ED and importance of action
- Case failures are discussed as progression of case presentation towards patient instability when a critical action is missed
- In the end, an appropriate algorithm of critical actions is established for all 4 cases

Concept Development

- **Phase I:**
Objective: Teaching trial - Designing a group participation lecture given to residents and identifying cases appropriate for multiple critical case scenarios. Continue building a series of critical cases and appropriate algorithms using 4-6 cases per algorithm.
Results: Teaching tool has been developed with positive feedback from residents and supervising faculty. Residents at each level of training felt challenged.
- **Phase II:**
Objective: Designing a scoring system to evaluate resident proficiency after the skill set. Developing a survey to measure the efficacy of the teaching tool.
Results: In development
- **Phase III:**
Objective: Taking the teaching tool series and applying the activity in our simulation lab utilizing multiple simulations. Studying the effectiveness of the teaching model at other Emergency Medicine residency programs.
Results: To begin academic year 2009/2010

Conclusion

- Simultaneous critical case presentations are an essential part of the practice of Emergency Medicine though not classically taught in a formal method
- The use of critical case simulation further enhances resident teaching, participation, and confidence in the care of multiple ill patients
- With increases in ED visits and increasing patient acuity, being prepared to appropriately and efficiently treat multiple critically ill patients in synchrony is an essential skill for graduating EM residents and should be incorporated in Emergency Medicine education

T4) Time for Change: State-of-the-Art Emergency Medicine Residents' Toxicology Rotation : Mohammed A. Alhelail¹ : 1. Emergency Medicine, King Abdulaziz Medical City, Riyadh, Saudi Arabia.

INTRODUCTION: The Model of the Clinical Practice of Emergency Medicine (EM) was published in 2006, and includes the toxicology core contents. Most EM residency programs have a one-month toxicology rotation usually at an affiliated poison center. Some of these core contents can be covered during the bedside teaching, while others are expected to be covered during this one-month rotation. Goal: To develop a one-month medical toxicology rotation curriculum for the EM residents (adults and pediatrics) rotating in a poison center (PC), and use different modules to teach the core contents. **METHODS:** In addition to bedside teaching, the following modules were developed to deliver specific objectives: Daily rounds: During two-hour daily rounds, the medical toxicology fellows will go over the cases in which they were consulted. In this round-table teaching module, the rotators participate in demonstrating the appropriate approach, discussing the supporting evidence, reviewing the basic science and pathophysiology of that relevant exposure, and discussing the appropriate disposition of the patient. Lecture series: The rotator will listen to selected lectures by the attending toxicologist

or fellows. Chapter review: The rotator will select from a list of pre-chosen topics and review and present them during the daily rounds. Self-instructed module: These case-scenario-based study questions will cover the parts of the core contents that the residents need to know but that are not covered during the other activities. PC calls listening: The residents will spend four hours per rotation with the Certified Specialist in Poison Information listening to incoming calls. At the end of this assignment the residents will be asked to answer questions as an evaluation method. Evaluation Methods: Direct observation, global assessment, in-house written examination, structured case discussion, simulation, project assessment, and check-list. CONCLUSION: During this rotation, structured teaching will help to achieve the goals and assist in providing feedback and evaluation. The Model of the Clinical Practice of EM can be taught using different modules.

T5) The REST Study: Rectal Exams Should Be Terminated Prior To Initiating Anticoagulation in the Emergency Department : Sergey M. Motov¹, Joon Choi¹, Antonios Likorezos¹, Jason Zimmerman¹, Elizabeth Marquart¹ : 1. Emergency Medicine, Maimonides Medical Center, Brooklyn, NY, USA.

INTRODUCTION: No previous studies have evaluated the necessity for the use of the digital rectal exam (DRE) and testing stool for occult blood prior to the administration of anticoagulation. The purpose of this study is to determine the rate of complications associated with starting anticoagulation in the Emergency Department (ED) and its correlation with DRE results. Our hypothesis is that DRE and testing stool for occult blood have little impact in evaluating patients for possible GI bleeding prior to anticoagulation therapy. METHODS: This is a prospective observational study. ED patients considered for anticoagulation are followed to assess whether they get a DRE and develop acute GI hemorrhage while in the hospital. If DRE is performed, stool is tested for occult blood. Demographic, medical history, clinical, and laboratory data are also collected to assess for complications related to anticoagulation therapy. RESULTS: To date, 180 patients are enrolled in the study. The median age of the study patients is 69 years (range: 35 to 102). History: 10% of patients had a GI bleed at any time in the past, and 2% of patients had black stool and 0.6% of patient had a bloody stool in last 24 hours. Five percent use NSAIDS, 46% use Aspirin, 28% use Plavix, 7% use Coumadin. Physical examination: 12% had no DRE. Of the remaining patients, 94% had brown, 4% black, 1% yellow stool, and 1% had BRBPR. Eleven percent of patients had a positive stool guaiac test. Treatment: 3% were given Lovenox and 97% given Heparin. Outcomes: 10% had a drop in hemoglobin ≥ 2 mg/dl, no patient required reversal of Heparin or emergent endoscopy or surgery; no patient required platelet transfusion due to HIT. None of the patients required packed red blood cell transfusion due to acute/active bleeding. CONCLUSION: DRE and testing stool for occult blood have little impact in evaluating patients for possible GI hemorrhage prior to anticoagulation therapy in the ED and do not have significant prognostic and therapeutic value.

T6) Weblog, a new technique for interpersonal communication : Keihan Golshani¹, Mohammad Farnia¹, Amir Nejati¹, Gholamreza Sadeghipour roodsari¹ : 1. Emergency Medicine, Tehran Medical University, Isfahan, Isfahan/Isfahan, Iran.

INTRODUCTION: Weblog is a virtual place which allows us share our commentaries, events, and opinions with others through the internet, worldwide. For this reason the Emergency Department of Tehran University/School of Medicine decided to start a Persian language weblog for its emergency medicine residents and professors, to evaluate if there will be any effect on their workplace interpersonal communication skills. This weblog contains a home page with posts, comments, calendar and archives. The emergency medicine residents and professors have options to write with their real name or a pseudonym. **METHODS:** We evaluated all posts and comments during 5 month as a longitudinal observational retrospective study. **RESULTS:** There were about 10540 visitors during 5 month (mean 76 visits per day). 93.58% of visitors were from Iran, 2.5% from USA, 1.23% from Poland, 0.55% from UK, 0.33% from Canada, 0.32% from Kuwait, 0.25% from Azerbaijan, 0.25% from Brazil, 0.17% from Germany, 0.16% from Turkey and 0.66% from elsewhere. There were 129 posts during 5 month (22% wrote by faculties and 78% by emergency medicine residents). As comments; there were not any limitations and all visitors could send their opinions in the comment section. The content of the posts was: 8% educational, 7% about research problems, 31% about current administrative and management problems in ED, 7% about news in emergency medicine, 7% about congratulations in special situations, and 40% miscellaneous. There were 614 comments for the posts. 52% of these posts were correlated with the content of posts and 48% were unrelated. We asked the emergency medicine residents to complete a questionnaire about their opinion on the weblog after 5 months of starting the weblog and we collected their opinions. **CONCLUSION:** The viewpoint of our emergency medicine residents was that they used the weblog as an adjunct to educational purposes and they wanted to assign more place for institutional posts to ameliorating their professional knowledge and skills. We believed that this kind of relation between residents and faculties can ameliorate their workplace ambience.

T7) The Educational Value and Procedural Experience of an International Clinical Medicine Elective for a US Emergency Medical Resident. : Andrew H. Brainard¹, Scott Melanson¹ : 1. Emergency Medicine, St Luke's Hospital Networks, Bethlehem, PA, USA.

INTRODUCTION: International clinical medicine electives are becoming common for United States based Emergency Medicine (EM) programs. Many residents and faculty feel that they can provide increased clinical and professional experience as part of their educational process. However, there is little data on the actual educational value of these electives. This case report assesses perceived educational value of a single resident's five-week international clinical medicine elective within a three-year emergency medical residency. **METHODS:** A community-based EM residency program located in the Northeast US has started an international clinical medical elective by sending a single midlevel resident on a five week elective to a rural hospital in Kiwoko Uganda. A detailed catalogue was kept of all procedures completed in the five week elective and compared to the previous five-week period at the home institution. Other quantitative and qualitative differences were also recorded. Being a descriptive study, no statistical analysis was performed. **RESULTS:** The resident performed several EM procedures at a much higher frequency during the elective than during the previous time period. These EM procedures included pericardiocentesis (7 vs. 0), Paracentesis (6 vs. 1), thoracentesis (6 vs. 1), tube thoracostomy (5 vs. 1), lumbar puncture

(9 vs. 2), dental extraction (6 vs. 0), fracture reduction (6 vs. 2), joint reduction (4 vs. 1), pediatric resuscitation (19 vs 8), and peripheral venous access (24 vs. 3). Several other EM procedures like laceration repair, splinting, arthrocentesis, and diagnostic ultrasound, were performed at approximately the same frequency. Other clinical activities, such as adult resuscitation, emergency intubation, central line insertion, procedural analgesia and sedation, and radiography and ECG interpretations were performed at a much lower rate in Africa.

CONCLUSION:

The difference in procedural experience alone seems to justify the educational value of a clinical international medicine rotation. Additional research is required to make more broad conclusions.

Table 1: Comparison of EM procedures during a five-week international clinical medicine elective and the previous five-week US based emergency medicine rotation.

Procedure	International Clinical Medicine Elective	International Clinical Medicine Elective Emergency Medicine Rotation
Pericardiocentesis	7	0
Paracentesis	6	1
Thoracentesis	6	1
Tube thoracostomy	5	1
Lumbar punctures	9	2
Dental extraction	6	0
Fracture reduction	6	2
Joint reduction	4	1
Pediatric resuscitation	19	8
Peripheral venous access	24	3
Laceration repair	13	17
Splinting	4	7
Arthrocentesis	2	1
Diagnostic ultrasound	~ 50*	~ 50*
Adult resuscitation	9	22
Emergency intubation	3	6
Central line insertion	0	3
Procedural analgesia and sedation	0	5
Emergency	0	1

cardioversion		
Radiography interpretation	8	> 100*
ECG interpretation	5	> 100*

* estimate (data not recorded)



T8) Using Patient Voice to Construct an Emergency Medicine Clerkship Curriculum : Constance Peterson¹ : 1. Emergency Department, New York-Presbyterian Hospital Cornell Weill Medical Center, New York, NY, USA.

While the past few decades brought significant advances in emergency medicine, these

advances occurred within a healthcare system comprised of complex bureaucracies organized more for the benefit of providers than consumers. Economic incentives and legal considerations assumed tremendous importance in the delivery of emergency care, eroding emphasis on patient centered care. Educators are in a unique position to ask whether these trends best serve patient interests and to move the system to a place where patient voice and issues of empowerment and access are integral to the care itself. Central to this curriculum model is the concept that the learning experience should be distinguished by attentiveness to patient voice. The Clerkship is based on experiential learning and designed to integrate the varied aspects of emergency care. Active participation in multi-disciplinary, collaborative partnerships serve to illustrate the complex range of skills required to identify barriers and create micro-systems of patient care that function with integrated attention to the macro-systems in which they operate. Applying ethnographic research techniques, we focus on areas of communication, patient rights, workplace culture and power dynamics; students are also challenged to find their own voice by engaging in self-reflection. Case-based problem solving tutorials introduce the ethical/legal dilemmas encountered in the emergency setting. Didactic sessions expand the scope and diversity of knowledge by exploring the historical evolution and social/cultural forces which shape patterns of health, medicine and disease. Students examine the social implications of power inequities, scientific discovery; acquire comprehensive understanding of legislative/regulatory systems and how such systems affect the healthcare of individuals and drive institutional change. Subjective evaluation of this EM Clerkship has shown that it effectively facilitates learning and professional growth in a way which affords students the opportunity to acquire patient centered skills such as empathic communication, negotiation, conflict resolution and collaborative problem solving.

T9) TRAINING PROGRAM FOR RESIDENTS IN AN EMERGENCY MEDICAL SERVICES : Luis Pardillos Ferrer¹, Alonso Mateos Rodriguez¹, Montarelo Navajo Alberto¹, Belen de la Parte de la Fuente¹, Susana Peñuela Melero¹, Pedro Huertas Alcazar¹, Blanca Vazquez Quiroga¹ : 1. UME 1, SUMMA112, Madrid, madrid, Spain.

BACKGROUND: In the new program of the specialty of family physician a period of rotation is included in police officers format in services of urgencies of primary care and of emergencies. This period among 25% of the guards of the residents of the first year and 75% of those of fourth year. In this respect in the Community of Madrid the whole assistance of urgencies and emergencies is a competition of the Emergency Medical Service Of Madrid SUMMA112, for what this Service has started a specific program to give content to these residents. **DISCUSSION:** There has been created an educational unit of family and community medicine by coordinator, tutors and commission advises. There has been written a formative program of the SUMMA112 that extracts to itself the formative program of the national commission of the specialty. But, in addition, it has been extended by some very specific competitions of the emergency services that were not coming gathered in the previous document. Likewise a plan has been elaborated on the educational methodology to apply and a evaluative planning globally in order that all the tutors take an educational similar line. The aim of this article is to explain these improvements.

T10) Effectiveness of a Brief International Educational Program on Extended Focused Assessment with

Sonography for Trauma (EFAST): A Dominican Republic Pilot Study : Pina Patel¹, Laura Sosa², Maria Gomez², Carolina Bencosme², Joshua Markowitz³, Amado A. Baez¹ : 1. Emergency Medicine, Harvard Medical School / Universidad Iberoamericana, Boston, MA, USA. 2. Hospital General Plaza de la Salud, Santo Domingo, Dominican Republic. 3. Yale University School of Medicine, New Haven, CT, USA.

INTRODUCTION: In the Dominican Republic (D.R.) trauma is a major public health burden. The extended focused assessment with sonography for trauma (EFAST) is a well validated point of care tool that enhances the clinician’s ability to evaluate significant injuries in the trauma patient. We designed a brief EFAST training program directed to D.R. resident physicians. **Objective:** Evaluation of a brief international educational program on the EFAST by comparison of pre and post test scores. **METHODS:** We developed an interactive educational program that included: Introduction to basic ultrasound and the EFAST with ultrasound images and videos, supplemented by volunteer live scanning sessions with standardized patients. We implemented a “before and after” design. A pre-test and immediate post-test were administered using images and case-based questions, for intra-class correlation duplicate scenarios were inserted within the pre and post-test. Chi square and student t test were used for statistical significance, relative risk was for strength of association. **RESULTS:** 46 participants completed the pre and post-test, all resident physicians. None of the providers had participated in a prior EFAST training program. Participants reported 3.85 mean years of practicing medicine (range: 1-7 years). Table-1 demonstrates pre and post test scores and analysis. Level of training was not a predictor for better scoring P0.24,RR of 2.04 (95 CI 0.54 to7.69). When asked about comfort in performing an EFAST exam there was a significant improvement in participants’ response before and after the educational program with a significantly more expressing comfort after the training RR 17.74 (95% CI 4.52-69.64) P<0.001. There was a significant improvement in scoring of the duplicate scenarios when comparing with 4 adequate scores in the pre-test vs. 34 in the post-test (RR 6.40 (95 % CI 2.74 to 14.96 P <0.001). **CONCLUSION:** This educational intervention proved to be an effective tool in the education of Dominican Republic resident physicians.

Table-1 Pre and Post test scores and analysis

Variable	Mean (%)	95% CI (SD)
Pre-Test Score	24	21.0 to 27 (10.1)
Post-Test Score	64.8	59.9 to 69.7 (16.4)

Mean Difference: -40.8 (95% CI -45.9 to 35.6) P<0.001

T11) Impact of Hurricane Katrina on Residency Training in New Orleans : Deborah E. Sibley¹, Lala M. Dunbar¹, Trevor Mills¹, Lisa Mills¹, Michelle Haydel¹, Abdullah A. Farook¹ : 1. Medicine/Emergency Medicine, LSU Health Sciences Center, New Orleans, LA, USA.

INTRODUCTION: This project documents the impact Hurricane Katrina had on residency training at Tulane University School of Medicine (TSOM) and Louisiana State University

Health Sciences Center - New Orleans (LSUHSCNO). METHODS: The Emergency Medicine (EM) residency will be detailed. Included is data from TSOM and LSUHSCNO residents, faculty, and administrators. RESULTS: Following Katrina, all medical facilities in New Orleans (NOLA) closed. Most LSUHSCNO and TSOM residents spread to state public hospitals. 200/526 residents at TSOM went to Baylor College of Medicine in Houston, TX. 75% of LSUHSCNO residents and most of the TSOM residents returned by August 2007. The residency programs themselves were greatly affected, as TUMC lost 2 programs in 2005-06, and another 4 the next year. TSOM lost 201 residents the year of Katrina, 200 of which had not returned the next year, and lost 173 of their full time faculty members in 2005 and 52 the next year. LSUHSCNO did not lose any programs the year Katrina hit, but dropped 15 programs the next year. 100 residents from multiple specialties left NOLA in 2005 and 57 the following year. LSUHSCNO had 124 full time faculty members leave after Katrina and 26 the next year. LSUHSCNO EM remained on scene working from the onset of Katrina through the present. LSUHSCNO EM residents who stayed helped staff urgent care venues set up to serve persons who remained in the city and relief workers. They also helped cleanup Charity Hospital until it was deemed nonviable. LSUHSCNO had 65 EM residents including those in EM/IM, which dropped to 45 over the next 1-2 years. 8 residents left the program immediately, but 100% of the 4th year residents remained. LSUHSCNO EM lost 5 of their 15 yearly spots in the 2006 match. CONCLUSIONS: Residents and faculty of all Orleans Parish hospitals faced many disaster management decisions while making personal decisions for themselves and their families. Despite the large number of training sites identified, the Residency Review Committee required major cuts in the number of positions. Supply of physicians for the NOLA area is sure to be diminished due to reductions in graduate training positions.

T12) Is Academic Productivity of Emergency Physicians affected by a Salary Incentive Plan? : Randy J. Hartman¹, Timothy C. Stallard¹, David L. Morgan¹, Cindy F. Rush¹ : 1. Scott and White Hospital, Texas A&M Health Science Center, Temple, TX, USA.

INTRODUCTION: Academic Emergency Departments are struggling with how to financially compensate their full-time faculty physicians. Some programs offer their physicians a flat salary alone while others add an additional financial incentive. This incentive plan may be based on patient care revenue or on academic productivity. The effect of an incentive plan on an academic faculty in regards to productivity has not been studied in great detail. Objective: Our goal was to examine a change in scholarly activity following the change in a bonus compensation plan at one institution. METHODS: The Emergency Department at a Level 1 Trauma Center that treats 80,000 patients a year with 15 full time faculty physicians and 30 resident physicians was studied. This was a retrospective analysis comparing three scholarly activities of the faculty during two 6 month periods from 2007 to 2009. These activities included lecturing at weekly didactic conferences, completion of resident evaluations, and the submission of research projects for publication. The first 6 month period consisted of faculty pay at a base salary plus financial rewards for the 3 scholarly activities and others. The second 6 month period consisted of the base salary pay plus a bonus for clinical RVU's. RESULTS: Eleven out of the fifteen full time staff physicians decreased their conference attendance. There was an overall change in attendance of -9.79% (median: -22.73%, standard

deviation: 47.57, p=0.038). Regarding evaluations, ten faculty decreased the number of overall completed resident evaluations. The mean change was -24.67% (median: -15%, standard deviation: 38.61, p=0.028). The percentage of faculty submitting projects dropped from 53% to 20%, and total projects dropped from 14 to 5 (a -64.3% and -62.5% change respectively, p=0.057). CONCLUSION: When the faculty bonus compensation system was changed from academic productivity to clinical productivity, there were significant decreases universally in academic activities. This information may be beneficial to other academic programs considering similar reviews and changes of their salary and incentive plans.

T13) EMERGENCY MEDICINE RESIDENT GRADUATES’ EDUCATIONAL PERCEPTION : Colleen Mayer¹, Richard D. Shih¹ : 1. Emergency Medicine, Morristown Memorial Hospital, Morristown, NJ, USA.

INTRODUCTION: The education of an emergency physician is complex and difficult. The components of this education are controversial. Educators often debate which portions have more importance. Learners are often asked to share their opinions on their educational process. However, these learners have little real world experience of emergency medicine (EM) practice. This study attempts to assess EM learners opinions on training adequacy immediately after EM residency completion and then five years later. METHODS: All graduating residents were sent a written survey to assess the adequacy of their training. Specific information collected included year of graduation, fellowship if pursued, type of practice (academic vs non-academic), improvements to EM curriculum, and improvements to residency training process. In addition, the same survey was sent five years after EM residency graduation. Results from graduating resident survey were compare to survey at five years. RESULTS: 19 residents (three graduating classes) were sent both one and five year surveys. The response rate for the year one and year five survey was 72% and 39% respectively. The one year survey had 18 overall suggestions for improvement from the 13 surveys returned. The five year had six. Comparing comments from 1 to 5 year surveys: Area of suggested improvement - see table. Other suggestions for improvement included areas of more diverse EM site experiences, journal club, radiology, fast track experience and trauma. CONCLUSIONS: EM learners perceptions of training inadequacy differ modestly as the learners gain practical EM experience.

Area of Suggested Improvement

	Pediatrics	Faculty Teaching	Ultrasound	Administrative
1 Year Survey	22%	22%	6%	6%
5 Year Survey	17%	17%	33%	17%

T14) RESEARCH EXPERIENCE OF APPLICANTS TO AN EMERGENCY MEDICINE RESIDENCY PROGRAM : Laura Shih², Colleen Mayer¹, Richard D. Shih¹ : 1. Emergency Medicine, Morristown Memorial Hospital, Morristown, NJ, USA. 2. Somerset Medical Center, Somerville, NJ, USA.

INTRODUCTION: Medical student competition for emergency medicine (EM) residency spots continues to become more difficult. As medical student graduate numbers increase this will continue to worsen. One of the attributes of a successful candidate is their research portfolio. The aim of this study is to assess the previous research experience of EM applicants that were ranked for match at an EM program. **METHODS:** All ranked applicants to an EM residency program during one year were assessed for their past research experience. A closed question data form was utilized to collect information from applicant files submitted via ERAS (electronic application form). The number of publications were recorded. Each publication was searched by medline and google to verify the citation. **RESULTS:** 78 applicants had their ERAS applications reviewed. The average number of publications for each applicant was 1.1 (0-12). 61% of the applicants had no listed publications. Of the 86 publications listed, 71 were identified by medline or google search (83%). **CONCLUSIONS:** EM residency applicants frequently have past research experience. Some have extensive publication records. Most listed citations are easily verified. A percentage of the citations were not verified. It is unclear the reasons for this.

T15) PERFORMANCE IMPROVEMENT OF EMERGENCY MEDICINE RESIDENT CHARTING : Colleen Mayer¹, Richard D. Shih¹, Brian Walsh¹, Michael E. Silverman¹ : 1. Emergency Medicine, Morristown Memorial Hospital, Morristown, NJ, USA.

INTRODUCTION: Medical documentation has become increasingly difficult and more complex. Documentation for medical, billing and legal purposes is difficult to teach physicians in training. The objective of this study was to assess patient documentation of EM residents after assessment and feedback. **METHODS:** All PGY I emergency medicine residents had charts from 9 patients (3 chest pain, 3 abdominal pain and 3 head trauma) selected at random. Assessment forms for these medical complaints were utilized to objectively assess historical, physical exam and management issues on each of the medical charts (0-100 scale). Each resident was given yearly feedback regarding charting performance. During their subsequent years, PGY-2 and PGY-3, the same procedure was followed. Their average score from PGY-1 was compared to PGY-2 and PGY-3 year performance. **RESULTS:** The medical charts of 48 residents over a five year period were evaluated. 432 total charts were assessed. The average score of all charts reviewed was 85 out of 100. The PGY-1, PGY-2, PGY-3 averages were 84.5, 84.0 and 86.5 respectively. **CONCLUSIONS:** EM resident chart assessment and feedback appear to improve medical charting and documentation modestly.

T16) Mixed simulation as a means to teach principles of mass casualty incidents : Stephanie Stuart¹, Timothy Stallard¹, Michael Spohn¹, Cindy Rush¹, Lisa Ward¹, Mohsen Shabahang¹ : 1. Emergency, Scott and White / Texas A&M, Temple, TX, USA.

INTRODUCTION: Training in mass casualty incident management is an increasingly important part of physician education. Training for mass casualty events typically involves moulaged actors posing as patients and is primarily limited to triage without practice in the

resuscitation of patients. High fidelity patient simulation allows learners to participate in patient care scenarios in a low risk environment. Objectives: To study the effect of a mixed mass casualty training exercise on the efficacy of teaching principles of mass casualty incident management. METHODS: On October 30, 2008 we performed an observational study utilizing physicians in training at our community based hospital and simulation center. A mass casualty training exercise combining use of moulaged actors with high fidelity simulators (Sim Man, Laerdal) allowing subjects to triage and perform initial resuscitation of multiply injured trauma patients was developed. Residents from Surgery, Emergency Medicine, Internal Medicine and Pediatrics programs completed a test consisting of 13 questions on mass casualty response prior to the exercise. The exercise consisted of 15 separate simulations delivered to the training facility in rapid succession. Six of the high acuity simulations began as moulaged patients and became high fidelity simulations after triage. After the exercise, all subjects participated in a debriefing session. The test answers were at no time discussed with subjects. Subjects then re-took the same test after the debriefing. RESULTS: Statistical analysis using the paired student t-test found that there was a statistically significant difference in the pre-exercise test scores (mean = 73.3, 95% CI 64.66-81.96) versus the post-exercise test scores (mean = 83.6, 95% CI 77.15-89.99) ($p = 0.004$). CONCLUSION: The use of this mixed mass casualty training exercise combining use of moulaged actors with a high fidelity patient simulator improves medical knowledge in the area of mass casualty incident management.





T17) A Wellness Program for Emergency Medicine Residents : Noel Mancherje¹, Helen Bloch¹ : 1. Long Island Jewish Medical Center, New Hyde Park, NY, USA.

With the high incidence of stress, burnout and attrition in Emergency Medicine (EM), wellness education has been recognized as important for EM residents. We present a retrospective descriptive analysis of our 13 year experience with an EM wellness program. Goals of Program:

1) Education on specific topics relating to stress and wellness in EM; 2) Create a forum to facilitate honest discussion and achieve insights into stressors and their effects; 3) To teach the value of discussion with colleagues; 4) To teach coping mechanisms and techniques for prevention of burnout; 5) To empower residents to create and implement solutions. Format: 1) Meetings held at private location remote from hospital; 2) Didactic presentations on wellness topics; 3) Small group confidential discussion; 4) Practicing acting out stressful scenarios (eg. medical errors or death of a patient); 5) Safe venue for expressing concerns; 6) Forum for creative thinking, new ideas and solutions; 7) Group recreation to foster team work and sharing of experiences. Rules to facilitate discussion: 1) Freedom of speech (any participant can say anything); 2) Confidentiality (agreement not to reveal intimate issues outside of program); 3) No evaluation/No judgment; 4) Group equality (all opinions are

valid); 5) Use “I” statements (speak from personal experience). Wellness Topics covered: Shift work, Circadian Rhythms, Sleep disorders; Dealing with Errors; Time Management; Physician Impairment, Substance Abuse; Difficult Patients and Co-workers; Communication skills; Dysfunctional beliefs; Critical Incident Stress Debriefing; Dealing with a Malpractice Suit; Death and Dying; Dealing with Change; Spiritual and Religious aspects of practice; Yoga and Meditation; Gender and Cultural issues; Financial Wellness; Wellness in your New Job; Personality Styles and Personal Awareness. Experience: Feedback from participants reveal that they have benefited from education in these topics. In particular, they appreciate a forum in which they can speak freely, express concerns honestly, hear similar concerns from others and learn solutions together. Participants indicate that they have made positive changes based on lessons from the program.

T18) Are Children Less Likely Than Adults To Receive Analgesia While Being Ruled Out For Appendicitis?

: Lisa Moreno-Walton¹, Rahul Prasnkumar², Blanca Lugo², Muhammed Waseem² : 1. Emergency Medicine, Louisiana State University Health Sciences Center, New Orleans, LA, USA. 2. Lincoln Medical and Mental Health Center, Bronx, NY, USA.

INTRODUCTION: Many health care professionals contend that children need less analgesia because of their different perception of pain, and very young children forget pain so no analgesia is needed at all. This tendency to withhold analgesia is especially true in patients being ruled out for appendicitis. In contrast, in these cases there is a tendency to give children antibiotics more than adults. Our hypotheses are that children are less likely to receive pre-operative analgesia in the ED than adults in suspected cases of appendicitis, and are more likely to receive pre-operative antibiotics. Objective: To determine whether the traditional beliefs that we hold as physicians actually affect the way in which we administer analgesia and antibiotics in the ER to children as compared to adults. **METHODS:** The data was collected on all consecutive patients evaluated in the ED with a “rule out appendicitis” diagnosis over one year. The data included whether each patient received analgesia and antibiotics in the ED and the timing of each event, and the subsequent pathological diagnosis. Statistical analysis was performed to determine the differences in ED administration of analgesia and antibiotics in pediatric and adult patients. **RESULTS:** The data was collected on 151 patients (101 adults and 50 pediatric). 38% of pediatric “rule out appendicitis” patients and 46.5% of adults received pre-operative analgesia in the ED, and 56% of children and 50.5% of adults received antibiotics. Also, 86% of adults and 80% of pediatric patients were found to have appendicitis on pathological diagnosis, with the highest pathological correlation in the 11-30 age groups and lowest in the 2-5 and 51+ age groups. **CONCLUSION:** When compared to adults, fewer pediatric patients were treated with analgesics in the ER in cases of suspected appendicitis, while they were more likely to be given pre-operative antibiotics. Efforts should be made to improve pain relief for children in the ER.

T19) Procedural Sedation and Analgesia in an Emergency Department in the Netherlands : Egon Zwets¹, Menno I. Gaakeer¹, Rebekka Veugelers¹, Christine Houser¹, Joost J.L.M. Bierens² : 1. Emergency Medicine, Albert Schweitzer Hospital, Dordrecht, Netherlands. 2. VU Medical Center, Amsterdam,

T20) Pain Management in the Emergency Department: Is Intervention at Triage the Answer? : Michael Abbo¹ : 1. Emergency Medicine, Rashid Trauma Center, Dubai, United Arab Emirates.

INTRODUCTION: In the past when a patient appeared at triage with a painful ailment the triage personnel would offer a pain reliever. This practice has been curtailed. Current practice in many Emergency Departments has changed. In most centers patients now have to be seen by an emergency physician prior to receiving pain relief. In this study we measured the time from arrival to administration of pain reliever. The hypothesis is that if pain control is initiated on arrival in triage, and prior to being seen by a physician, the time to pain relief is attained more rapidly than in current practice. **METHODS:** A randomized blinded prospective study was conducted. Baseline data was collected from one hundred and fifty eight patients to determine arrival time to pain reliever administration in the current practice. Subsequently patients were given placebo or oral Diclofenac on arrival to triage and pain relief at 1 hour was recorded using a visual analog scale. **RESULTS:** Currently the mean time from arrival to analgesia was 71 minutes. For those patients with moderate pain the mean time to administration was 76 minutes, for severe pain it was 34 minutes. The introduction of triage initiated diclofenac reduced the time to administration to less than 5 minutes. When compared to placebo and controls the pain scores at 60 minutes were significantly reduced (1.1 less on analog pain scale, p 0.027). There were no adverse events. **CONCLUSIONS:** The time between arrival and administration of pain relief is unacceptably long (mean 71 minutes) and effects patient satisfaction. Administering pain relievers when the patient arrives in triage significantly reduces pain at 60 minutes post arrival. Based on this study standing orders to allow triage personnel to administer pain relievers is recommended.

T21) CHANGING ATTITUDES ABOUT PAIN MANAGEMENT WITH PHYSICIANS' EDUCATION AND VISUAL ANALOG SCALE ADDED ON THE PATIENT EVALUATION FORM : Zafer Topaktas¹, Cem Oktay¹, Ozlem Yigit¹, Faruk Gungor¹, Aydin Toksoy¹ : 1. Department of Emergency Medicine, Akdeniz University School of Medicine, Antalya, Turkey.

INTRODUCTION: Though most emergency department (ED) presentations are due to acute painful conditions, numerous articles reveal that inadequate pain medication is administered in EDs. The purpose of this study is to determine the effects of a 2-hour educational program about pain management and inserting a visual analog scale (VAS) to the ED patient evaluation forms. **METHODS:** This prospective observational clinical study was performed at the ED of Akdeniz University Hospital. All patients presenting to the ED with an acute painful condition were included in the study. Patients were excluded if they were under age 18, had any condition requiring resuscitation, had acute myocardial infarction, suspected ischemic chest pain, neurological deficits, neck stiffness, fever, communicational barrier, had taken any pain medication within 4 hours of presentation, or did not consent to participate in the study. Baseline and 30 minute pain scores were measured on an unnumbered 100 mm VAS. Data were collected in 4 different periods as before the education, after 2 hours of

theoretical presentation, a month after the education and after the change of patient evaluation forms. RESULTS: A total of 212 patients were included with 57, 46, 54 and 55 patients in each period, respectively. No significant difference was determined on the baseline pain scores among groups. At the end of the study, there was no statistically significant difference among the groups about the administration time of pain medication, the intensity of pain at 30 minutes, the necessity of an additional pain medication and the overall satisfaction of the patient at 30 minutes. CONCLUSION: Educational program on pain management and adding a part about pain and VAS on the patient evaluation form did not change physicians' attitude on pain management. Effective pain management should be one of the most important goals of ED practice and pain medication should be implemented timely and adequately. Further studies should be done to evaluate the effect of interactive training on pain medication and to change physicians' attitudes.

T22) Nitrous oxide effectiveness as an analgesic in minor trauma in the emergency department of a referral hospital : Alfonso Hidalgo¹, Manuel Salido¹, Raimundo Seara¹ : 1. Emergency, Hospital Carlos Haya, Málaga, Málaga, Spain.

INTRODUCTION: Nitrous oxide (N₂O) is the oldest anaesthetic agent known. It had a recreational use until 1884. It has been used as an anaesthetic agent in odontology procedures, as analgesic in obstetrics, prehospital settings and paediatric trauma. Indications in adults are not well established. We studied the efficacy of N₂O as an analgesic agent in adult patients with minor traumatic injuries requiring painful procedures in our ED. METHODS: We conducted a prospective, aleatorized experimental study in the minor trauma room, enrolling 46 patients who attended in several days, 24 men and 22 women, from January to March of 2009. Patients with low consciousness levels, haemodynamic instability, emphysema, and pregnancy were excluded. The N₂O mixture ("Kalinox") was administered by single-use face-mask, in concentrations of 50% N₂O with 50% of oxygen, for three minutes before the procedure. Procedures included: 22 closed fracture reductions, 12 joint dislocation reductions, 2 open fracture reductions, 1 fracture-dislocation reduction, 5 burn wound dressings, and 4 other procedures. We monitored consciousness level, respiratory frequency, and pulse oximetry. We used a visual analogue scale (VAS) to assess pain intensity before, during and after the N₂O administration, while we were carrying out the procedures. For the statistic analysis we used Student t-test. RESULTS: 42 patients reported a mean improvement of 6 over 10 points in the VAS. 17 of these patients had received previous medication and 3 needed rescue drugs. 11 received rescue treatment. 14 improved with N₂O alone. 4 patients dropped out of the study. 10 patients reported minimal adverse effects. CONCLUSION: N₂O seems to be safe and effective in pain control in joint dislocation reduction and as an adjuvant agent in closed fracture reduction. We did not find benefits in burn patients. No severe adverse effects were described, but our sample is relatively small and we have not included a control group. VAS has intrinsic limitations. Further controlled studies are needed to confirm the clinical efficacy and to define indications.

Monitoring Initial Pain

Visual Analogue Scale	Frequency	Percentage	Valid Percentage	Accumulated Percentage
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3	1	2.2	2.2	2.2
4	1	2.2	2.2	4.3
5	4	8.7	8.7	13.0
6	6	13.0	13.0	26.1
7	5	10.9	10.9	37.0
8	18	39.1	39.1	76.1
9	4	8.7	8.7	84.8
10	7	15.2	15.2	100.0
Total	46	100.0	100.0	

Ending procedure with N2O Pain

Visual Analogue Scale	Frecuency	Percentage	Valid Percentage	Accumulated Percentage
0	9	19.6	19.6	19.6
1	17	37.0	37.0	56.5
2	3	6.5	6.5	63.0
3	5	10.9	10.9	73.9
4	3	6.5	6.6	80.4
5	5	10.9	10.9	91.3
7	1	2.2	2.2	93.5
10	3	6.5	6.5	100.0
Total	46	100.0	100.0	

T23) Prospective study on the administration of equimolecular mixture of oxygen protoxide of nitrogen (EMOPN) in adult emergency department: Advantages, disadvantages and benefit-risk ratio : Marilyne Almeras¹, Syamack Aghababaei¹, Ruxandra Cojocar¹, Geeta Mounier¹, Corina Duja¹, Laurent Calvel¹, Jacques Kopferschmitt¹ : 1. HUS, Strasbourg, France.

INTRODUCTION: EMOPN is a gas with analgesic properties. A license has been delivered by the French Drug Agency for children or adults' fracture and dislocation reductions. We studied the administration of this gas, in the emergency department. **METHODS:** The aim of this study was to evaluate the efficacy and tolerance of this drug in a population of traumatized adults, during diagnostic and therapeutic painful procedures. This prospective study was conducted during 13 months, between May 2007 and June 2008 at an adult trauma center. **RESULTS:** Two hundred and ninety three patients were enrolled, with heterogeneous characteristics. Their age ranged from 15 to 93 years, with mean age of 46 years old. Diagnoses were varied, mainly fractures (105 patients) and dislocations (158 patients). Pain intensity was quantified before and after painful procedures. All patients received EMOPN, most of them (54,9%) in association with other analgesic drugs. At the end of the

administration, nurses and doctors had to estimate a benefit-risk ratio, for each patient. We have constituted different groups of patients according to their age, their sex or the diagnosis, to compare the analgesic efficiency of the treatments, the occurrence of adverse events and the benefit-risk ratio. Our results demonstrated that EMOPN was efficient in most patients, male or female, especially for young people (less than 25 years old) and elderly patients (more than 75 years old), and whatever was the diagnosis. The rate of adverse events seemed to be explain by the administration of co-analgesic drugs. The evaluation of benefit-risk ratio was excellent for more than 80% of patients, in particular for elderly patients.

CONCLUSION: Our study suggests that EMOPN is efficient and well tolerated in traumatized adults, for diagnostic and therapeutic painful procedures, in particular without co-analgesic drugs. This gas seems to be especially interesting in elderly patients, who frequently experience adverse events of analgesic drugs.

T24) The use of the PNEUPAC® VR1 and PARAPac® in a hyperbaric environment. : Kevin Lathouwers¹, Sven Van Poucke¹, Yves Préal¹, Johan Van Canneyt¹, Guy Vundelinckx¹, Rene Heylen¹ : 1. ZOL Genk, Genk, Belgium.

INTRODUCTION: The aim of this study was to quantitatively assess the use of the Pneupac® VR1 and PARAPac® in a hyperbaric environment. The performance of all pneumatic devices inside a hyperbaric environment is changed by increased pressure and altered density of gases. **METHODS:** The Pneupac® VR1 and PARAPac ‘Medic’ ventilator are pneumatically powered, time cycled, volume preset, pressure limited ventilators which uses the same technology as existing legally marketed devices. It depends solely on the pressure of the supply gas for its operation which makes them suitable for use in a hyperbaric environment. The ventilator was connected to an oxygen cylinder with a pressure valve and to a test lung using uni-directional valves which were delivered with the ventilator itself. We used a respirometer to do the measurements. The pressure in the hyperbaric chamber was increased to 2 and 2,5 ATA. **RESULTS:** At 1, 2 and 2,5 ATA and 50% oxygen delivery setting we respectively measured 572, 373, 302 ml. At 100% oxygen delivery setting we measured 597, 339, 272ml with the Pneupac® VR1. The frequency increased from 13 to 17 and 18 times per minute. With a fixed setting for the PARAPac we measured respectively 713, 394, 331 ml with air mix and 711, 377, 310 ml with 100% O₂. The frequency increased from 12, 17 to 19 times per minute. The oxygen concentration in the chamber was the same throughout the procedure, although there was more need of washing in the chamber.

CONCLUSIONS: This study demonstrates that the respiratory features of both ventilators underwent significant changes under hyperbaric conditions. Because we decided to not increase the tidal volume or frequency, we were not able to measure if these two ventilators can compensate the tidal flow with different settings. Knowledge of physical properties of gas under pressure and construction and type of operation of the ventilator helps in prediction of changes of the working parameters in hyperbaric environment. It should be used with thorough watchfulness and or transcutaneous carbon dioxide measurements. The oxygen concentration in the chamber should be monitored at all time.

T25) Conscious Sedation in the Emergency Room is Safe, Improves Patient Care, and Avoids Admission : Jesus Diaz-Guijarro Hayes¹, Martin Betz¹, Juan Carlos Medina Alvarez² : 1. ER, Sheikh Khalifa Medical

City, Abu Dhabi, United Arab Emirates. 2. Hospital de Torrevieja, Torrevieja, Alicante, Spain.

INTRODUCTION: Conscious sedation,(CS), is a technique consistent in the administration of some drugs which alter the level of consciousness, but the patient is still able to respond to physical stimulation and verbal commands and to maintain an unassisted airway. CS is used to sedate patients that, for any cause, makes some diagnostics tests and painful procedures impossible to perform and would otherwise require admission. **METHODS:** From February 2006, we performed two, 6 months, audits in our department looking for previous assessment, adverse events with CS, side effects, drugs used, patients' demographic and type of procedure performed. We reviewed a total of 228, (125 +103) cases. The previous assessment was based in the American Society Anesthesiologist,(ASA), grading. Only ASA 1 and 2 were considered fit for CS. Standard anesthetics time guidelines, from the last eat and drink, for elective surgery were followed. Every CS was performed by one ER Consultant in the room habilitated for CS and with standard monitoring, EKG, Pulse Oximeter, and blood pressure and with supplementary Oxygen supply by face mask or nasal cannula. The procedures were done by ER staff or other specialty staff. Drugs used were: ketamine, propofol, midazolam, and fentanyl, alone or in combination. The procedures performed under CS were: manipulation of fractures, suture of lacerations, reduction of dislocations, incision and drainage of abscess, CT scan and lumbar punctures. **RESULTS:** Around 70% of the patient were males and >50% of the patients were under 12 years of age, around 18% of them were under 3 years of age. Due to apnea (4) and laryngospasm (1), 5 (2+3) patients required bag-valve-mask ventilation, no one more than 2 minutes. No one required intubation. Other adverse effects were emesis,(3.9%) and emergence reaction (1.9%). No patient required hospitalization because of adverse effects. 2.4% of the patients were identified as having insufficient sedation/analgesia. 100% of the procedures were completed and all the patients with discharge plan were discharged as soon as they were in satisfactory condition.

CS at SKMC in numbers

	22/02/06-31/08/06	01/10/07-31/03/08	TOTAL	TOTAL %
Number of CS	125	103	228	100
Males	89	73	162	71.05
Females	36	30	66	28.95
Under 12 years	71	48	119	52.19
Under 3 years	26	17	43	18.85
Laceration repair	46	25	71	31.14
Fracture reduction	34	43	77	33.77
Dislocation reduction	19	26	45	19.73
Abscess I&D	15	7	22	9.64
CT scan	7	1	8	3.50
Lumbar puncture	3	1	4	1.75

Ketamine alone or combined with other was the most used drug. 87.7 % of the patients in the

first audit and 98.1 % in the second audit received Ketamine.



Repair of a laceration in a finger due to a crush injury in a child under conscious sedation

T26) Techniques in regional anaesthesia for the treatment of trauma patients: preliminary assessment of its usefulness : Sylweryusz Kosinski¹, Przemyslaw Gula¹, Jozef Janczy¹, Ryszard Gajdosz² : 1. Tatra Mountain Rescue Service (TOPR), Zakopane, Poland. 2. Emergency Medicine Department of the CM of the Jagiellonian University, Krakow, Poland.

METHODS: The presented work constitutes a retrospective analysis of the usefulness of fascia iliaca compartment blockade (FICB) and popliteal block performed at the Emergency Room (ER) in the treatment of pain following injury of the lower extremities. **RESULTS:** Out of 26 blocks performed for 25 patients 13 resulted in successful anaesthesia (50%). Two (2) attempts of anaesthesia of the hip fascia compartment and three (2) attempts of anaesthesia of the ischiadic nerve branch failed. An isolated “three in one” block was effective in alleviating post-traumatic pain in 10 cases (77%), with complementary methods in 11 cases (84.5%).

The popliteal block successfully alleviated pain of 9 patients (69%), 11 patients (84,5%) jointly with other procedures. None of the patients experienced any side effects or developed any early complications resulting from the anaesthesia. **CONCLUSION:** The results seem to confirm the effectiveness of the fascia iliaca compartment blockade (FICB) in emergency medicine (EM). The lateral approach anaesthesia of the ischiadic nerve branch, due to the technical requirements and lower success rate, may be considered as one of the possible options of analgesia, though it would require further research.

T27) The predictive factors of difficult tracheal intubation in pre hospital emergency medicine : Amira Jaafar¹, Abdelaziz Zouari¹, Samir Abdelmoumen¹, Slim Jedidi¹, Sana Dridi¹, Sonia Karma¹, Hajer Belakhdar¹, Mounir Daghfous¹ : 1. SAMU 01 of Tunis, Tunis, Tunisia.

INTRODUCTION: The purpose of this study was to determine factors predictive of difficult tracheal intubation in pre hospital setting. **METHODS:** Retrospective study conducted from a database collected in real time. We have included in this study all patients covered by the SMUR of Tunis, intubated and ventilated out of the hospital over a period of one year (1st January 2008 - December 31, 2008). We collected data on the demographic criteria, the ground, time of departure and arrival of the medical pre hospital team, the indication for tracheal intubation, the drugs used for general anaesthesia and the number of attempts at intubation. We compared the group "Difficult intubation" (DI) defined as more than two attempts or the use of a laryngeal mask, to the group of "Easy intubation" (EI).

For the univariate analysis, we used the Student's t-test to compare quantitative variables and the Chi square test for qualitative variables. We then used logistic regression for multivariate analysis. The significance level was set at 0.05. **RESULTS:** We included 102 patients (61 M and 41 F) supported by the SMUR of Tunis and was intubated and ventilated in the pre hospital setting. The average age was 21 years+/-46.45. The indication for tracheal intubation was a coma in 70% of cases, respiratory failure in 8% and cardiac arrest in 22% of cases. The rate of difficult intubation was 13.7%. On univariate analysis significant predictive factors of difficult intubation in the pre hospital setting: the trauma context, the use of hypnomidate for GA and coma. The multivariate analysis identified as an independent predictive factor of difficult intubation in emergency pre hospital care the trauma context (p = 0.021).

CONCLUSION: The pre hospital tracheal intubation of a trauma victim increases the risk of difficult intubation. Special training for physicians in the airway management of trauma patients should limit the risk of morbidity related to difficult intubation.

T28) Airway Management : Afshin Amini¹, Mohamad Kalantari meibodi¹, Ali Shahrami¹, Manige Kalantari meibodi¹, Ali Arhami dolatabadi¹ : 1. emergency, sbmu, Tehran, tehran, Iran.

INTRODUCTION: Airway skills are perhaps the most important skills that an emergency physician possesses. The new techniques used to find the airway let the physicians to save the golden time and decrease the mortality rate. In this paper we performed a systematic review of the articles that introduced these methods.

METHODS: We conducted a systematic review of 10 cohort studies from Barcelona University, Alabama University, Virginia University and Singapore University that were

performed during 2003 to 2006 and the published results exist on line on the internet.

RESULTS: The findings from this systematic review indicate that before intubation we should know the case of death or near death of patients. If the patient is near death we should determine whether his or her airway is difficult or not. The "no difficult" airway should be managed with RSI(rapid sequence intubation) and if the case is expected to be a difficult airway the approach depends on the oxygen saturation and may include BMV (bag mask ventilation), awake intubation technique, LMA (laryngeal mask air way), cricothyrotomy or blind nasotracheal intubation. For near death cases (crash airway) it is recommended to first use BMV and then try to intubation. If it is not successful we would consider this a failed airway attempt and use BMV and then cricothyrotomy.

CONCLUSIONS: It is necessary for emergency physicians to learn to work with these instruments because management of the airway is the first duty of emergency medicine and emergency physician should decide about personal workers management in emergency department and using each instrument in the best way.

T29) Pupillary Response to Light is Preserved in Patients Undergoing Pharmacological Neuromuscular Blockade for Rapid Sequence Intubation : Mohsen M. Akhlaghi¹, Steven Andescavage¹, David Caro¹ : 1. Emergency Medicine, Unversity of Florida, Jacksonville, FL, USA.

INTRODUCTION: Objective: To determine if RSI administration affects pupillary reactivity in the emergency setting. **METHODS:** IRB-approved, prospective, observational study in an urban Level 1 trauma center. Convenience sampling from February 2008 to February 2009. Inclusion criteria: Age >18 years old, bilateral pupil reactivity prior to RSI, free of eye disease or eye surgery, No prehospital medicine that may affect pupil reactivity (ie, atropine, naloxone, etc...). Protocol: RSI was administered and endotracheal tube placement confirmed, within five minutes of RSI the pupils were reassessed by the same two physicians independently, The same definition of reactivity was maintained; no access to pupilometer. Recorded data: Reactivity prior to RSI (yes or no); Sedative and dose; Paralytic and dose; Reactivity post RSI (yes or no); Reviewed data; Patient weight; Diagnosis; Eye pathology/surgery. **RESULTS:** 96 patients met inclusion criteria. 92 patients had reactivity post RSI. There were 2 instances where physicians disagreed on reactivity. Gross agreement of pupil reactivity of the observers was 98% (CI = 93% - 100%) with an intraclass correlation of 0.90. Liberal definition of reactivity yields 98% (CI = 93% - 100%). Conservative definition yields 96% (CI = 90% - 99%). **CONCLUSION:** Neuromuscular blockers do not appear to inhibit pupillary reactivity in the vast majority of patients whose pupils are reactive prior to RSI. **Limitations:** Selection bias; Subjective pupil measurement; Convenience sample; Future Investigation Neuropathologies, pupil reactivity, and their relationship to RSI.

T30) A Comparison of the CMAC Videolaryngoscope to Direct Laryngoscopy for Emergency Department Intubations : John C. Sakles¹, Stephen F. Chiu¹ : 1. Department of Emergency Medicine, University of Arizona, Tucson, AZ, USA.

INTRODUCTION: In 2009, the CMAC videolaryngoscope (CMAC) was released by Karl Storz in the US for clinical use. The CMAC utilizes a design similar to the Mac 3 and Mac 4 laryngoscope blades and incorporates a microvideo camera on its undersurface so that the operator may view an image of the airway on a video monitor. **Objective:** The purpose of this study was to compare the success rates and performance characteristics of the CMAC to Direct Laryngoscopy (DL) for the intubation of emergency department (ED) patients.

METHODS: From 1 Jan 2009 to 30 June 2009, all intubations performed in the ED with CMAC or DL were analyzed. After each intubation was performed, a data collection form was completed by the operator. Data was collected on success, number of attempts, Cormack-Lehane (CL) view, lens fogging (LF), lens contamination (LC), and number of difficult airway predictors (DAPs). LF was rated on a 10 cm visual analog scale of 0 to 10 (0 = no fog, 10 = completely fogged). LC was graded as none, mild, moderate, or severe. Descriptive statistics were used to compare success rates and performance characteristics. **RESULTS:** See table. **CONCLUSION:** In this preliminary study of ED intubations, the CMAC had a statistically significant higher 1st attempt success rate than DL. Although not statistically significant, the ultimate success rate trend favored the CMAC over DL. Additionally, the CMAC was able to obtain a better CL view than DL. The CMAC provided an excellent view of the airway, with only minimal lens fogging and very little lens contamination. Due to its similarity in design to the traditional laryngoscope and its superior performance to DL in this preliminary study, the CMAC appears to have a great deal of potential for use in ED intubations.

Success Rates and Performance Characteristics of CMAC vs. DL

	CMAC	DL	p-value
1st Attempt Success Rate	85.9% (55/64)	71.9% (97/135)	0.0323 (Fisher's Exact)
Ultimate Success Rate	95.3% (61/64)	88.1% (119/135)	0.1274 (Fisher's Exact)
CL View (I or II)	96.9% (62/64)	85.0% (113/133)	0.0143 (Fisher's Exact)
LF (Average)	0.59	N/A	N/A
LC (None or Mild)	92.2%	N/A	N/A

	(59/64)		
Number of DAPs (Average)	1.41	1.23	0.6181 (Paired t-test)

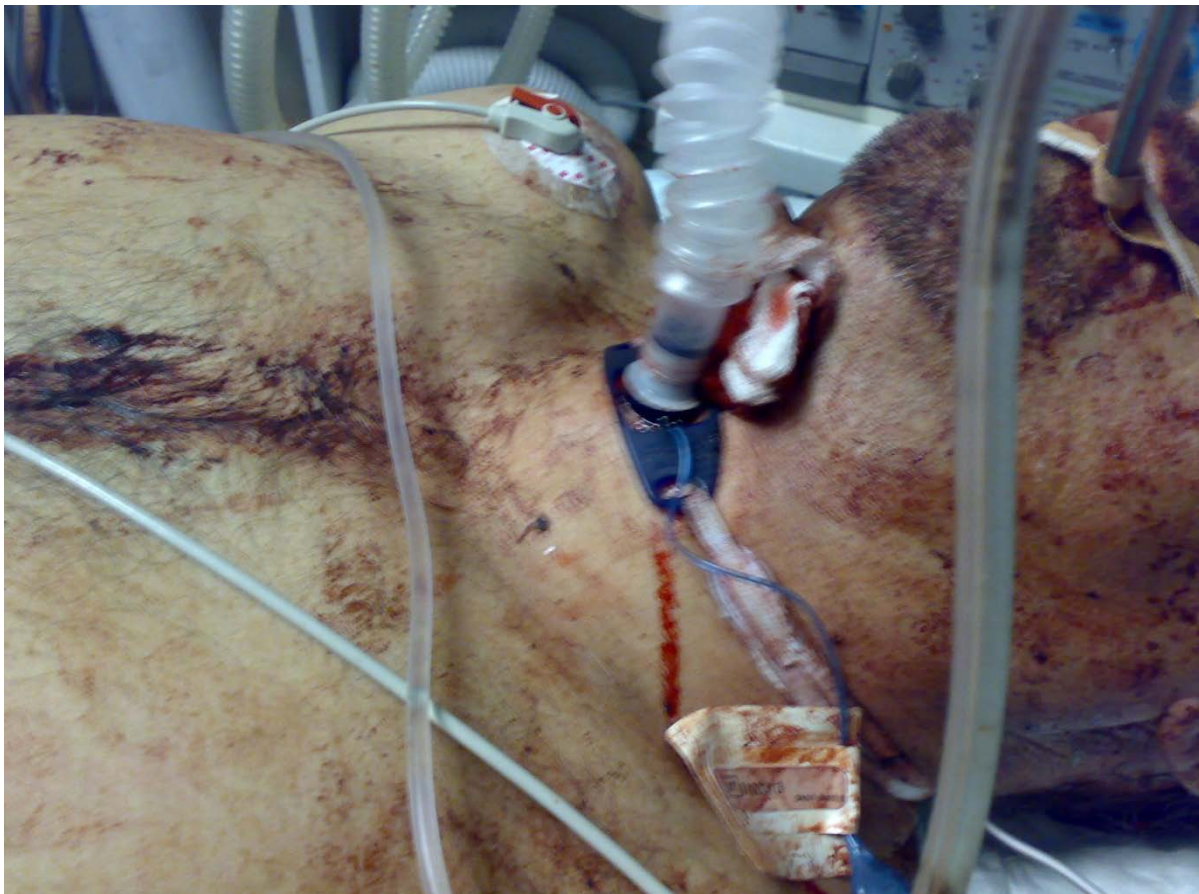
T31) The Routine Use of Pediatric Procedural Analgesia: Are We There Yet? : Julie A. Gorchynski¹, Thomas McLaughlin², Janet Rogers³ : 1. Emergency Medicine, JPS Health Network, Fort Worth, TX, USA. 2. CHRISTUS Spohn Health System, Corpus Christi, TX, USA. 3. JPS Health Network, Fort Worth, TX, USA.

INTRODUCTION: Objective: To assess the utilization of local anesthetics by emergency physicians (EP) and pediatric physicians (PP) who performed a lumbar puncture (LP) in subjects from birth to 24 months of age. Secondary measure: Explore current practices and utilization of pediatric procedural pain management for LP within the international medical community. **METHODS:** Prospective study of children, birth to 24 months of age that received an LP at a university hospital. Physicians performing the LP were blinded to the objective of the study. An Ovid international literature search was conducted for pediatric procedural pain management for LP. **RESULTS:** The sample population consisted of 223 subjects. 146 (66%) subjects received a local anesthetic prior to an LP; 126 subjects (57%) received 1% lidocaine while 32 subjects (14%) received EMLA. The use of local anesthetics differed greatly with the age. Local anesthetics were administered in 65/141 (46%) subjects less than 12 months of age and in 81/82 (98%) between 12 to 24 months of age. Subset analysis showed that local anesthetic was administered in 45/111 subjects (41%) less than 7 months of age, 20 /30 subjects (66%) between 7 to 11.99 months of age, 37/38 subjects (97%) of subjects between 12 to 17.99 months of age, and 24 of 24 (100%) between 18 to 24 months of age. EP and PP differed in the type of local anesthetic utilized prior to performing an LP. EP exclusively used 1% lidocaine while PP preferentially administered EMLA. The international literature reports a wide spectrum of modalities for pediatric procedural pain control for LP that include music, hypnosis, local anesthetic, oral analgesia, nitrous oxide, conscious sedation and general anesthesia, Utilization was highly variable by country and physician discretion. **CONCLUSION:** This is the first study to demonstrate that the use of local anesthetics prior to LP is not universal within this age group. Utilization of a local anesthetic varied by patient age; with younger children less likely to receive a local anesthetic. The international literature also reports the underutilization of pediatric analgesia for LPs worldwide.

T32) Cricothyrotomy in the prehospital setting: a case report : Nadya Pinto¹, Ana Lufinha¹ : 1. Prehospital Emergency Medical Service (VMER) - Hospital São Francisco Xavier, Lisbon, Portugal.

BACKGROUND: Even though airway management is considered to be a primary issue in trauma patients, the surgical airway is rarely used. In the prehospital scenario the success of this critical technique has many challenging features. The solutions to a failed orotracheal intubation in the prehospital settings are very restricted, mainly because of the lack of airway management devices and of skilled personnel. **CASE:** Prehospital providers were called for a 50 year old, male, with a self-inflicted gunshot wound with a submental entrance point and

frontal bone deformation suggesting an intracerebral pathway. Primary evaluation revealed imminent airway and breathing compromise, caused by tongue swelling, haemorrhage and haematoma; GCS 13. Immediately orotracheal intubation attempt by direct laryngoscopy with patient sedated but breathing spontaneously failed, provoking abundant stomach regurgitation after accidental oesophageal intubation. Subsequent to this event, there was clinical deterioration, with oxygen desaturation and severe bradycardia. An emergent cricothyrotomy was then performed with the Portex® PCK Cricothyrotomy Kit (using a number 6 cuffed cannula). The patient was then transported to the Emergency Room, under sedation and controlled ventilation, with striking improvement of his vital signs. He was admitted at the Surgical Intensive Care Unit. On the 2nd day he was orotracheally intubated, because of cricothyrotomy cannula obstruction, by direct laryngoscopy. Extubation was performed by the 5th day without complication. He was transferred on the 7th day to the infirmary with a favorable neurological outcome. **DISCUSSION:** In this particular case, one of the last resources of the difficult airway management algorithm was applied with success: an emergent cricothyrotomy. It was performed using a recently acquired cricothyrotomy kit, which was easy and safe to use in the prehospital setting. This device was able to maintain adequate ventilation and protect the airway from gastric and blood aspiration, resulting in a positive outcome to the patient's clinical situation.



T33) Dying in the Emergency Department (ED) : Ester Vendrell Torra¹, Eva Armero Garrigós¹, Victor Perez Claveria¹ : 1. Hospital Comarcal de Blanes, Blanes, Catalunya/Girona, Spain.

INTRODUCTION: Little is known about the death experience in the ED. **METHODS:** Retrospective review of the clinical history of patients who died in the ED during two years in a 100-bed hospital. **RESULTS:** 71 out of 92649 visits in the ED died (0.08%). 42% were female, mean age was 79 in female and 57 in male. Reasons for admission were dyspnea (25%), heart arrest (19%), and others (39%). A terminal illness was previously diagnosed in 18%. Medicalised transport to hospital was requested in 26%. The cause of death was unknown in 7 cases (of which 5 autopsies were requested). The most frequent presumptive diagnosis were: 22% cardiogenic event, 18% respiratory insufficiency, 17% septic process, 17% hypovolemic shock, 6% cerebral injury, 2% neoplastic disease, 16% others. 16 patients died before admission, 41 in the critical box, 14 in the conventional emergency room, 4 in conventional ambulance en route to hospital, 2 in the 24h-observation unit, and location is not registered in 10 cases. Cardio-pulmonary resuscitation was performed in 41 cases and electric countershocks in 15. Endotracheal intubation was applied in 40'8%, central venous access in 8'4%, and other devices in 26'7%. Specific nurse care was registered in 16'9%, and vasoactive drug were used in 26'7%, second-line antibiotic in 7%, sedation or third-step analgesics in 39'4%. Length of stay in the ED was 5'56 hours (0-64h). Every patient had a ratio of 9 visits in the ED in fifteen years (0-54), 2 in the last 6 months (0-10). 19'7% patients had been included in a Home-Care Programme. No document of vital testament was registered. An explicit non-reanimation medical order was registered in 16'9%, and this decision was taken with family's agreement in 58'3%. Contact or information to the patients' families was registered in 60'5%. **CONCLUSIONS:** 1. An average of one death every ten days was observed. 2. All professionals working in the ED need specific training to improve the global care required in this situation. 3. In this ward a special attention is needed for ischemic disease, sepsis and airway management. The availability of clinical guidelines concerning those topics will be important to improve mortality scores.

T34) Effect of a ramped position on ease of endotracheal intubation by novice intubators: randomised crossover trial : Abraham K. Wai¹, Colin A. Graham¹ : 1. Accident & Emergency , The Chinese University of Hong Kong, Sha Tin, Hong Kong, China.

INTRODUCTION/OBJECTIVE:

To compare laryngoscopy with a Macintosh blade to Glidescope with respect to the time to successful tracheal intubation, the percentage of glottic opening (POGO) score (video laryngoscope only) and the rate of complications, in both the supine and elevated (ramped) position using a commercially available mattress system (The Airpal®).

METHODS: 7. novice intubators (first-year medical students) attempted intubation on Human Patient Simulator (METI) with a 'normal airway' (Grade 1 Cormack-Lehane view) in both positions using both laryngoscopes. The POGO score was estimated by the intubator

during intubation. The time to intubation and the rate of complications (oesophageal intubation and dental trauma) were measured and compared. The time and POGO results were analysed using a two sample t-test and categorical results by the chi square test.

RESULTS:

There was no difference in the mean time to intubate in either positions ($p=0.33$). Intubation using the Macintosh laryngoscope was significantly faster than the video laryngoscope (mean difference 1.5 minutes, $p<0.001$). The view produced by video laryngoscope (mean POGO score) was 8% better in the elevated position than the supine position ($p=0.018$, t-test). The oesophageal intubation rate for the Macintosh laryngoscope was 15-17% compared to only 1.3% for the video laryngoscope, but dental trauma occurred in 53-56% of video laryngoscopies compared to only 2-6% of Macintosh laryngoscopies (all $p<0.001$).

CONCLUSION:

Novice intubators should start intubation with Macintosh laryngoscope instead of Glidescope. Higher esophageal intubation rate can be remedied by prompt and proper position confirmation. The Airpal® can be considered for better laryngoscopic view

T35) Pain in the Emergency Department: Analgesic Prescription and Patients Wishes : Peter Plantinga¹, Karel Kolkman¹ : 1. Emergency Department, Rijnstate Hospital, Arnhem, Netherlands.

INTRODUCTION: Numerous studies have demonstrated oligoanalgesia in patients presenting to the ED. Practice shows that a lot of patients refuse to take medication including analgesics. **Objectives:** To determine the number of provided analgesics to minor/major trauma patients attending our ED. To find out the number of patients who actually wish to receive analgesics. **METHODS:** At our urban level II trauma center and teaching Hospital with an ED attendance of 29.000 patients a year, a prospective observational study was conducted. In a 28 days period (April 2nd -30th 2007) all ED charts of attending minor and major trauma patients were reviewed for age, ethnicity, diagnosis, provided analgesics and possible local treatment. All patients were asked to fill in a questionnaire about their complaint, the presence of pain (scored with a Numerical Rating Scale), self administered analgesics, their desired and actually given analgesics. Patients younger than 16 years old, having a Glasgow Coma Scale less than 14 or ABC unstable were excluded. **RESULTS:** 1304 trauma patients were seen during the study period of which 369 were excluded, leaving 935 study patients. 422/935 (45%) patients returned the questionnaire. There was no significant difference between the group returning the questionnaire and the group not returning the questionnaire. When presenting at the ED, 352/422 (83%) patients were in pain and 95/422 (23%) had taken analgesics prior to their ED visit. A total of 109/422 (26%) patients received analgesics at our ED. 42/422 (10%) patients did not receive any analgesics but indicated in the questionnaire that they would have appreciated analgesics. 260/422 (62%) patients did not want any analgesic at all. **CONCLUSIONS:** Our study confirmed the overall pattern of oligoanalgesia for trauma patients attending the ED with 26% of patients receiving analgesics. Surprisingly, a patient questionnaire revealed that the majority (62%) of trauma

patients do not want any analgesics at all.

T36) Procedural Sedation in the Emergency Department:

The relationship between depth of sedation and patient recall and satisfaction (A pilot study) : Jennifer Freeston¹, Alexis Leal¹, Alasdair Gray¹ : 1. Emergency Medicine Research Group, University of Edinburgh, Edinburgh, United Kingdom.

INTRODUCTION: There is little data on patient recall after procedural sedation in the Emergency Department. We aimed to determine the prevalence of patient recall and the relationship between recall and levels of pain perception and patient satisfaction in a sample of patients receiving procedural sedation in the Emergency Department. **METHODS:** The American Society of Anesthesiologists sedation scale and physiological parameters were used to accurately assess level of sedation and discover its relationship with immediate and delayed recall, measured quantitatively, after procedural sedation in ED. Other parameters investigated were sedation duration, drug regimes including drug type, dosages, pain, and satisfaction. **RESULTS:** 9 of 20 patients recalled events during sedation, 3 of them sedated with propofol and 6 with midazolam. Sedation depth was significantly related to recall ($p < 0.05$) specifically with midazolam use. Higher pain scores were associated with increased recall ($p < 0.001$). Recall was inversely correlated with patient satisfaction ($p < 0.001$). **CONCLUSION:** Sedation depth is significantly associated with recall in the ED. Patient awareness of pain is associated with recall after sedation. The necessity for effective pain management and the importance of staff awareness of potential patient recall after procedural sedation is important. Further research to understand the relationship between sedation level and recall is warranted.

T37) Hospital Pain Control Using Networks and Distance Learning Infrastructures : Fabrizio La Mura¹, Roberto Pinna², Silvia Valsechi², Ezio Storelli¹, Rossella Marzi¹, Francesco Della Corte², Federico Barra², Chiara Ronco², Luca Carezzo² : 1. Pain Clinic, Azienda Ospedaliero-Universitaria , Novara, Italy. 2. Università degli Studi del Piemonte Orientale "A. Avogadro", Novara, Italy.

INTRODUCTION: The Hospital Committee for Pain Control (Comitato Ospedale Senza Dolore) in our University Hospital is composed of a Pain Clinic (in and out patients, day hospital), an APS, the Palliative Care Unit, with cooperating units such as Pharmacy, Psychology and others. Our web site, ALGONET.IT, was created both as a means of sharing information among patients and as a bridge for sharing clinical data among professionals belonging to different Hospitals. **METHODS:** A web portal with multiuser capability was created by us, and made available to the public. Every Unit has its section and users. An editorial board is in charge of editing contents. Thanks to the Computer Science Department, a Distance Learning Platform (Moodle) was created, with capabilities for asynchronous (files, forums, exercises, polls) and synchronous (webinars and videoconferencing) means of communication. A Virtual Library about pain was also created, with an built-in powerful search engine. **RESULTS:** The Italian Ministry of Health's web site links Algonet.it as an example of COSD. **CONCLUSIONS:** Algonet.it succeeds in aggregating professionals in several fields. Our next step will be the creation of a shared interactive clinical chart with the

potential to be used in several Italian Hospitals.

T39) Usefulness and feasibility of a simple protocol adoption for pain treatment in the ED managed by the triage nurse : Enrica Coltro¹, Cristiana Bessone¹, Maria Luisa Simone¹, Pamela Manni¹, Francesco Della Corte¹ : 1. Maggiore della Carità School of Medicine Hospital, Novara, Italy.

Introduction: More than 60% of patients seen in the ER suffer from pain and most of them remain usually unsatisfied of its treatment. With the aim of improving care of adult patients with acute pain, we developed and implemented clinical guidelines (based upon the practices described in the international literature) for the staff of nurses and physicians in our ED managed and started by the triage nurse.

Material and methods: From January 1 to September 30, 2008, 43.177 adult patients (age 18-65) were triaged at our ED. 1398 pts, affected by the following pathologies as inclusion criteria (trauma of isolated limb-962, renal colic-158, lumbar pain-203, ear and teeth pain-45 and others-30) and with a VAS > 4 at the triage received analgesic therapy based on an established protocol. The level of analgesia was then reevaluated at the medical visit. The number of pts who received any further treatment for pain relief on a medical indication were recorded. The nurses were interviewed by a questionnaire to evaluate the feasibility of the protocol application.

Results: Analgesia treatment was effective in most of patients; only 51/1398 (3,6%) pts received an additional treatment for pain relief at the medical visit, 27/51 for renal colic, 19/51 for back pain, 3/51 for minor trauma, 2/51 for odontalgia.

As regards compliance of nurse staff to protocol adoption, 91% agreed to be responsible for the its application; none found any difficulty to use and administer it. 91% of nurses declared that the patients were satisfied by the early treatment of pain before the medical visit.

Discussion: Even if there is not an international agreement in the international literature, giving the responsibility for decision making aspects of pain assessment and treatment in the ER patients to the nursing staff allowed a rapid and safe pain control with a small intervention by physician. A well defined protocol for indication, choice of drug and dosage should be established and agreed as a prerequisite.

References

1) Pain relief in the ER, are we doing it right? J. Anesth Clin. Pharmacol 2006; 22(2): 169-172

T40) Myocardial infarction diagnosis: does pre-hospital troponin help? : Patricia Freitas¹, Maria Bravo¹, António Folgado¹, Paulo Barreiros¹, Filipe Garcia¹, Nuno Sá¹, José Dias¹, Vitor Silva¹, Cláudia Febra¹, Ana Lufinha¹ : 1. Prehospital Emergency Medical Service - VMER, Hospital de São Francisco Xavier, Lisbon, Portugal.

INTRODUCTION: Cardiac troponins are the gold-standard markers used for myocardial infarction (MI) diagnosis. We hypothesized that measurement of cardiac troponin I (cTnI) in patients with angor, in the pre-hospital setting, would favor a different approach. METHODS: We prospectively enrolled 34 consecutive patients with typical angor, assisted by a pre-hospital medical team, made an EKG evaluation and collected MI risk factors, and asked the

medical team if an available cTnI measurement would change the therapeutic measures and final destination of the patient. RESULTS: An affirmative answer was obtained in 50% of the cases. When there was an EKG ST-elevation the answer was positive in 44.4%, as well as for 57.1% of the cases when there were other EKG anomalies and 54.5% in normal EKG. The presence of 2 or more MI risk factors was associated with a positive answer in 44.4% and less than 2 MI risk factors with 71.4%. CONCLUSIONS: The availability of cTnI measurement in patients assisted for angor in pre-hospital setting is perceived by the professionals as important to define therapeutics and destination of the patients, especially when there are EKG alterations other than ST-elevation at less MI risk factors.

T41) High Sensitivity Troponin T in the Diagnosis of Venous Thromboembolism : Shonagh K. Haslam¹, Edward Hinchliffe¹, Bilal Sethi¹, Alex Vylkov¹, Kerstin Hogg² : 1. Clinical Biochemistry, Salford Royal NHS Foundation Trust, Salford, United Kingdom. 2. University of Manchester, Manchester, United Kingdom.

INTRODUCTION: The mortality from recognised pulmonary embolism (PE) was reported to be 8.6% in 2006, however in 2004 the mortality for both treated and unrecognised venous thromboembolism (VTE) was quoted as 33%, thus highlighting VTE as a so called 'silent killer'. The diagnosis of VTE is complex and multifactorial. The current approach combines pre-test probability estimates with D-dimer to determine who has diagnostic imaging. Here we postulate that high sensitivity troponin T can be used as a diagnostic marker in VTE. METHODS: The Thromboembolism Assessment and Diagnosis (THREAD) study was carried out at Salford Royal Hospital, UK. All patients investigated for deep vein thrombosis (DVT) and PE between September 2008 and June 2009 were approached to take part in the study. Exclusion criteria were age <16 and lack of capacity. Aliquots of the first serum sample obtained after presentation with symptoms of VTE were taken and analysed for high sensitivity troponin T (Roche Diagnostics). All patients underwent reference standard diagnostic evaluation for DVT or PE as per evidence based protocol, and followed clinically for three months. This pilot study analyses the first 269 patients recruited to the study. Receiver operating characteristic curves were constructed to determine the diagnostic accuracy of high sensitivity troponin T. RESULTS: 298 patients were approached for consent, 21 declined and 8 were excluded. One failed to complete the reference standard. 262 samples were available for high sensitivity troponin T analysis. 125 patients were investigated for PE (prevalence 27%) and 137 investigated for DVT (prevalence 23%). Mean age 60, 55% female and 87% outpatients. 12% had a history of VTE, 11% had cancer and 17% had recent surgery. Three patients were diagnosed with acute coronary syndrome. The areas under the ROC curve for high sensitivity troponin T were 0.611 (95% CI 0.510-0.713) for PE and 0.482 (95% CI 0.365-0.713) for DVT. CONCLUSIONS: High sensitivity troponin T appears to show an association with PE, however this is not strong enough for high sensitivity troponin T to be used in isolation to diagnose PE.

T42) Is D-dimer A Valuable Test For Detection Of Acute Aortic Dissection In Emergency Department? : Murat Ersel¹, Ersin Aksay¹, Selahattin Kiyani¹, Selen Bayraktaroglu², Aslihan Yuruktumen¹, Murat Ozsarac¹, Tanzer Calkavur³ : 1. Ege University Department Of Emergency Medicine, Izmir, Turkey. 2. Ege University Department Of Radiology, Izmir, Turkey. 3. Ege University Department Of Cardiovascular Surgery, Izmir, Turkey.

INTRODUCTION: Acute aortic dissection is one of the catastrophic emergencies requiring early diagnosis and urgent surgery. Identification of these emergencies is still a challenge for emergency physicians. Studies suggest that a D-dimer testing may provide a valuable addition to the current diagnostic work-up of patients with suspected acute aortic dissection.

Objective: To determine diagnostic value of D-dimer testing detection of acute aortic dissection. **METHODS:** This study is a retrospective chart review of patients who were evaluated with suspicion of acute aortic dissection and had a d-dimer determination obtained during their work up in the emergency department. The study was conducted in a tertiary care center between February 2006-August 2008. The D-dimer assay used was the immunotubidimetric assay, with a normal range up to 0.246 µg/ml. **RESULTS:** 99 patients were included in the study, 30 patients were diagnosed as having acute aortic dissection and 69 patients were evaluated in the non - acute aortic dissection group. In comparison of the two groups, positive D-dimer results were found to be statistically significantly higher in the acute aortic dissection group as compared to the non-acute aortic dissection group (p:0.000). Sensitivity of the D-dimer to detect acute aortic dissection was found as 96.6% and negative predictive value of the test was 97.0%. Specificity and positive predictive value of the D-dimer were 47.8% and 44.6% respectively. **CONCLUSION:** D-dimer is a valuable test for identifying patients with suspected acute aortic dissection in the emergency department.

T43) Ischaemia modified albumin. A new biomarker for the diagnosis of venous thromboembolism? : Edward Hinchliffe¹, Shonagh Haslam¹, Bilal Sethi¹, Alex Vylkov¹, Kerstin Hogg² : 1. Salford Royal Hospital, Salford, United Kingdom. 2. The University of Manchester, Manchester, United Kingdom.

INTRODUCTION: Venous thromboembolism (VTE) including deep vein thrombosis (DVT) and pulmonary embolism (PE) is responsible for 32,000 deaths in hospitalised patients every year in the UK. Initial investigation of patients with suspected VTE recommends clinical probability score and D-dimer blood test. The Thromboembolism Assessment and Diagnosis (THREAD) study is a prospective diagnostic VTE study which aims to assess new blood biomarkers which may simplify the current diagnostic strategy for VTE. We hypothesise that ischaemia modified albumin (IMA) could be a potential diagnostic marker in DVT and PE. **METHODS:** The THREAD study was conducted at Salford Royal Hospital in the Northwest of England. From September 2008 till June 2009, all patients being investigated for VTE in the hospital were approached to participate in the study. Patients were excluded if they lacked capacity. Each patient underwent evidence based reference standard diagnostic algorithm for the diagnosis and exclusion of DVT or PE, along with three month follow-up. The first blood sample taken at the time of investigation was used for THREAD study IMA analysis. This analysis includes the initial 376 patients recruited to the study. Receiver operating characteristic curves were constructed to assess the diagnostic performance of IMA in

diagnosing VTE. RESULTS: 424 patients were approached for the study, 36 were excluded and 12 declined to participate. 179 patients were investigated for PE, of which 47 had confirmed PE (prevalence 26%). 196 patients were investigated for DVT, of which 40 had confirmed DVT (prevalence 20%), 1 patient failed to complete the gold standard. No serum sample was available for 4 patients, therefore 371 patient results were analysed. The areas under the ROC curves for IMA are 0.57 (95% CI 0.50-0.64) for all VTE, 0.61 (95% CI 0.51-0.70) for PE and 0.49 (95% CI 0.39-0.58) for DVT. CONCLUSIONS: IMA has no role in the diagnosis of DVT. It has a weak association with PE, but alone, cannot be used to diagnose the condition.

T44) Using cardiac biomarkers for differential diagnosis in the approach to chest pain in the Emergency Department : Carmen Diana Cimpoesu¹, Mihaela Dumea¹, Bogdan Zamfir², Claudia Sichirliu², Claudia Simian², Bogdan Bondaru², Oana Chira², Elena Mislea² : 1. Emergency Medicine, University of Medicine and Pharmacy Iasi, Iasi, Romania. 2. Emergency Clinical Hospital Sf. Spiridon , Iasi, Romania.

INTRODUCTION: In the ED, the ideal cardiac biomarker will allow early detection of patients with acute coronary syndrome, acute heart failure and pulmonary embolism and will indicate the optimal disposition and treatment. But in real life for economical point of view the biomarkers are often used only for differential diagnosis when the clinical and other paraclinic tools are insufficient to decide the admission and in-hospital management. Objectives: To assess the role in medical practice in the ED of cardiac biomarkers, and to evaluate the accuracy of differential diagnosis made using the biomarkers and also its prognostic potential. METHODS: Retrospective study including the patients who presented to the Emergency Department of Clinical Emergency "Sf. Spiridon" Hospital Iasi, Romania how need, on the clinical basis, differential diagnosis of chest pain with or without dyspnea. For the patients the treating emergency physician performs the determination of cardiac biomarkers using a Pathfast Device for Troponin I, D-dimer, NT-proBNP and Cardiac Reader for Troponin T. The study period was the 30th of September 2008- the 30th of May 2009. Statistical analysis was performed using SPSS 13.0. RESULTS: 1599 patients with chest pain were included. Based on cardiac biomarkers 46,7% of patients were admitted to the hospital (39,3% to cardiology and 7.4% to others clinics). The admission disposition was correlated with a high level of NT pro-BNP and D-dimers. In-hospital mortality was 0.06% and the better predictor of mortality was NT-proBNP ($r=0,275$, $p<0.001$). No patient sent home died or developed an AMI in the first 7 days. In our study troponin I correlated better with a positive diagnosis for AMI ($p<0,001$) than troponin T. CONCLUSIONS: A panel of cardiac biomarkers may provide for both a rapid "rule out" and a rapid identification of patients at high risk. NT-proBNP appears to be the best indicator of necessity of admission and predictor of mortality for the patient with chest pain presenting to the ED. The differential diagnosis may become more comfortable using the cardiac biomarkers.

T45) Sensitivity and specificity of a new Innovance D-dimer assay to rule out venous thromboembolism and comparison to existing assays : Edward A. Panacek¹, Michaela Canova¹, Abhi Gorhe¹, Robert Gosselin¹ : 1. EM, UC Davis, Sacramento, CA, USA.

INTRODUCTION: The aim of this study was to determine the sensitivity, specificity and negative predictive value [NPV] of a new D-dimer test, the Innovance D-dimer (Siemens Healthcare Diagnostics, USA) in patients presenting to the emergency department being evaluated for deep vein thrombosis [DVT] and/or pulmonary embolism [PE]; and to compare it to other available assays. **METHODS:** Patients with no prior history of DVT or PE, with specific radiographic diagnostic imaging studies ordered, were enrolled. After consenting, blood was collected, processed, and tested for Innovance D-dimer on the BCS analyzer (Siemens). Cutoff for normal Innovance D-dimer is <0.50 mg/L. 5 other available, comparison D-dimer assays were also run. Age, gender, and imaging study results, were also recorded. If imaging was negative, the subject was re-contacted at 3 months, for final diagnostic outcome. IRB approval was in place and each subject consented to the study. **RESULTS:** 248 patients were enrolled in the study, and available for analysis. 37% were males [91/248]; median age of 51 years [range: 18-81 years]. 11% demonstrated a VTE using objective radiographic imaging studies, with 9.6% DVTs, 10.5% PEs, and 3 patients with both DVT and PE proven. The sensitivity, specificity and NPV of the Innovance D-dimer for combined VTE was 97.3% [95%CI: 92.7-100%], 30.8% [95%CI: 34.5-35.3%], 99.1% [95%CI: 97.7-99.7%] respectively. The other assays had sensitivities of 94.4-97.3%, specificities of 28.3-33.3% and NPV of 98.3-99.2%. The sensitivity, specificity and NPV for the new assay for PE was 96.0%, 35.4%, 98.8% respectively, and DVT was 100.0%, 23.1%, 100.0% respectively. **CONCLUSIONS:** The Innovance D-dimer method performs as well, or better than other assays. It is an acceptable method for excluding DVT or PE in outpatient populations.

T46) High Salt Foods Do Not Increase the 3 Day Risk of Acute Decompensation in Patients with Chronic Heart Failure : Jesse Borke¹, Peter Wyr² : 1. Emergency Medicine, New York Presbyterian Hospital, New York, NY, USA. 2. Columbia University College of Physicians and Surgeons, New York, NY, USA.

INTRODUCTION: Risk factors for exacerbations of congestive heart failure (CHF) have not been clearly defined. The role of dietary sodium in particular is poorly understood.

OBJECTIVES: To examine the role of short-term dietary sodium intake in acute decompensated heart failure (ADHF). **METHODS:** 182 patients with chronic CHF presenting to a university tertiary referral center emergency department for ADHF (cases) or for other reasons (controls) were prospectively enrolled in a case-control design. Cases and controls were compared with respect to age, smoking, recent sodium intake (RSI), medication non-adherence, history of coronary artery disease, and hypertension. A food frequency questionnaire was utilized to estimate RSI, defined as intake in the past 3 days of the 12 highest-sodium food categories adapted from the USDA National Nutrient Database.

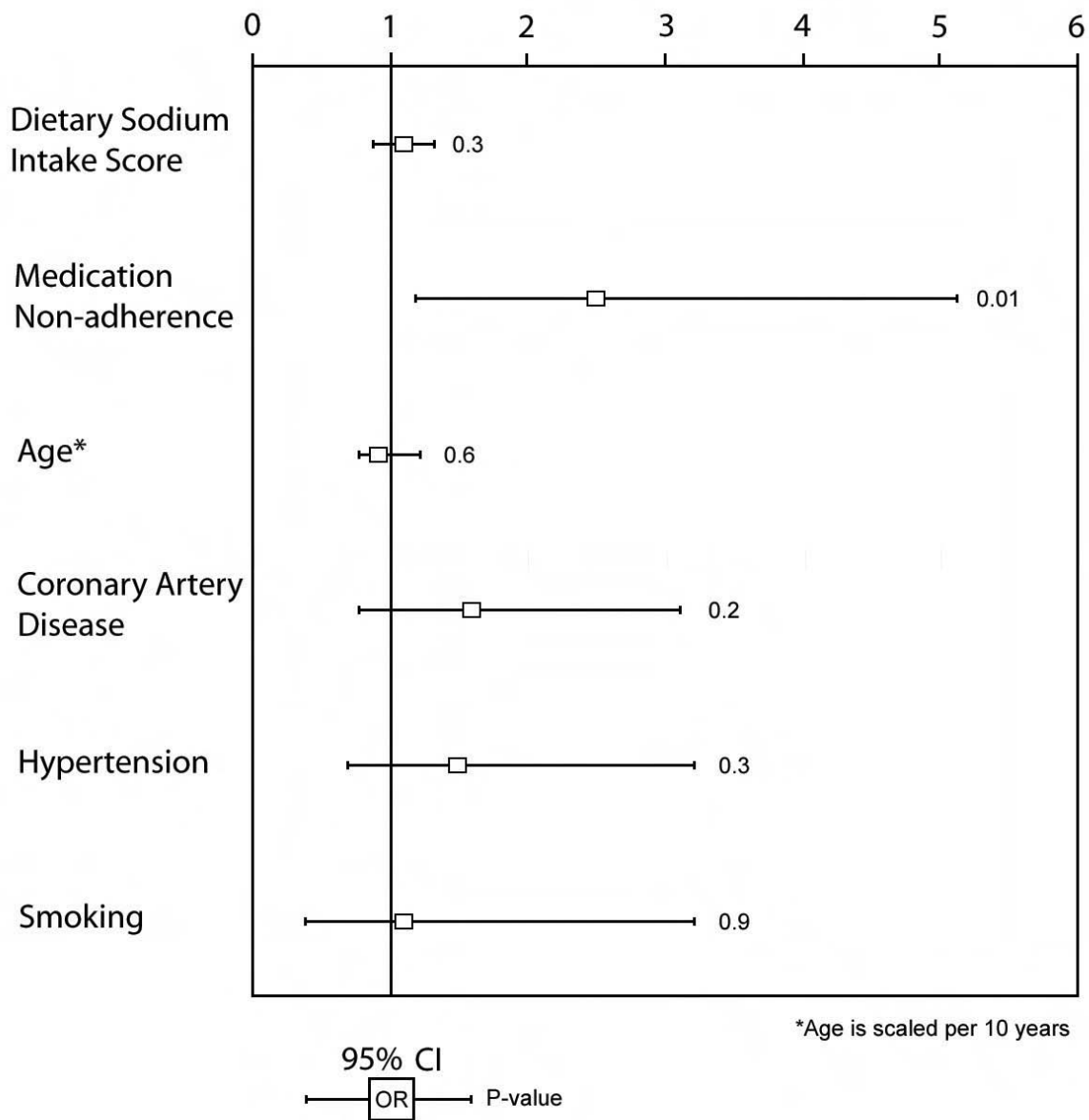
RESULTS: A comparison of the ADHF group with the control group showed that, when adjusted for age, smoking, medication non-adherence, coronary artery disease, and hypertension, ADHF was not significantly associated with short-term dietary sodium intake (OR of ADHF for each increase in the number of high sodium food types consumed, 1.1 (95% CI 0.9 - 1.3; P=0.3). ADHF was significantly associated with medication non-adherence (OR of ADHF, 2.5 (95% CI 1.2 - 5.1; P=0.01). **CONCLUSIONS:** Patients who consume many high sodium food types appear to be at no greater risk of presenting to the

emergency department with ADHF. Conversely, those who report non-adherence with medications appear to be at significantly elevated risk.

Comparison of the ADHF Group with the Control Group by Means of a Logistic Regression Analysis

	OR (95% CI)	p-value
dietary sodium intake score	1.1 (0.9, 1.3)	0.3
medication non-adherence	2.5 (1.2, 5.1)	0.01
age [§]	0.9 (0.8, 1.2)	0.6
coronary artery disease	1.6 (0.8, 3.1)	0.2
hypertension	1.5 (0.7, 3.2)	0.3
smoking	1.1 (0.4, 3.2)	0.9

§ age is scaled per 10 years



T47) Application of a New Scoring Instrument to Predict Intracerebral Hemorrhage and Outcome After Thrombolysis for Acute Ischemic Stroke in a Community Hospital Emergency Department : Shannon Holt¹, Cindy Bakker¹, Rolla Sweis¹, Kathleen Rzechula¹, Melvin Wichter¹, Erik Kulstad¹ : 1. Advocate Christ Medical Center, Chicago, IL, USA.

INTRODUCTION: Intracerebral hemorrhage (ICH), which can be a devastating complication

of acute ischemic stroke (AIS), is a known risk associated with the use of tPA for thrombolysis of AIS. The question of how best to select patients for treatment with tPA remains controversial. The hemorrhage after thrombolysis (HAT) score is a newly proposed risk stratification instrument for predicting ICH and outcome after treatment with tPA. We sought to evaluate the accuracy of the HAT score in patients treated with tPA in our ED. **METHODS:** We performed a retrospective observational study of patients who presented to our community hospital ED over a 31 month period with symptoms of stroke and who were treated with tPA. Outcomes were determined by medical record review and telephone contact with patients (or the families of patients) discharged from the hospital. We measured the ability of the HAT score [based on (i) presenting NIHSS score, (ii) blood glucose level and history of diabetes, and (iii) initial head CT scan] to predict ICH, mortality, and favorable outcome (mRS<2) with receiver operating characteristic curves (ROC). **RESULTS:** A total of 39 patients were treated over the study period. Median age was 72 years (IQR 56 to 80), gender was 64% female, and median NIHSS score was 11 (IQR 6 to 17). Twelve patients (31%, 95% CI 16% to 46%) developed ICH, and 6 patients (15%, 95% CI 4% to 27%) died. Area under the ROC (AUC) for the prediction of any ICH was 0.66 (95% CI .47 to .84), for prediction of mortality .67 (95% CI .43 to .91), and for prediction of favorable outcome 0.77 (95% CI .62 to .91, P=.009). **CONCLUSIONS:** The HAT score performed well for the prediction of favorable outcome (mRS<2), but was less successful in predicting the likelihood of ICH or mortality in our patients treated with tPA.

T48) An Irish Emergency Department Experience of Primary PCI Service At an Off-site Facility : Ken Maleady¹, Caitriona Mullarkey¹, Emily O'Conor¹ : 1. Emergency Department, Connolly Hospital , Dublin, Ireland.

INTRODUCTION: Primary Percutaneous Coronary Intervention (PCI) is superior to thrombolysis for the treatment of acute ST-elevation myocardial infarction (STEMI). AHA/ACC advocates primary PCI within 90 mins for on-site cardiac catheterisation and 180 mins for an off-site facility. Primary PCI is increasingly used in the initial management of patients presenting to Connolly Emergency Department with an acute STEMI. The Mater Hospital provides 24 hour off-site angiography service to the ED through the Cardiology service. **Aim:** To quantify current volume of Primary PCI service and assess our compliance with AHA/ACC time targets. **METHODS:** We undertook a retrospective audit of all patients presenting to the ED with an acute STEMI in 2008. **RESULTS:** A total of 58 patients were identified, 45 (77%) male and 13 (23%) female with an mean age of 64 years. Twenty nine were thrombolysed, 24 had primary PCI and 5 patients were treated conservatively. Two-thirds of patients with acute MI presented between the hours of 08:00 and 17:00. Of those presenting outside of these hours there was comparable rates of thrombolysis vs. primary PCI. Of the 41% of patients which were transferred for primary PCI the mean door-to-balloon time was 110 minutes. Our average door-to-needle times for thrombolysis continue to improve – 50 mins in 2007 to 36 minutes in 2008. Twenty seven percent of those thrombolysed required rescue PCI. **CONCLUSION:** We have achieved Primary PCI times well within AHA/ACC guidelines and have demonstrated excellent 24 hour access to off-site interventional cardiology services.

T49) Amiodarone vs propafenone in the management of atrial fibrillation in an acute setting: a prospective randomized study. : Antonio Bonora¹, Giovanni Dellagiocoma¹, Federico Beltrame², Germana Zerman¹, Paolo Benussi², Claudio Pistorelli¹ : 1. Emergency Department - University of Verona , Verona, Veneto, Italy. 2. Cardiology Department - University of Verona, Verona, Veneto, Italy.

INTRODUCTION: Following the results we recently reached comparing amiodarone to propafenone in the treatment of atrial fibrillation (AF) in the acute setting, we further planned this prospective, randomized study in order to compare the two drugs as regards to efficacy, quickness and safety. **METHODS:** In addition to common exclusion criteria, we thought convenient to leave out all the patients with previous attempt at rhythm conversion, successful or less, with one or both the drugs. In this way we selected 165 patients (80 male, 85 female; mean age 64.4 ys, range 28-82) out of 247 overall attempts at restoring sinus rhythm carried out in our Emergency Department from January 2006 to June 2007. After being AF confirmed, patients were randomized to receive amiodarone 4 mg/kg i.v. in 20-30 minutes or propafenone 2 mg/kg i.v. in 15-20 minutes. If needed, a continuous administration of amiodarone 50 mg/h or propafenone 0.0075 mg/kg/h was carried out. All the patients were observed during a 12 hours period regardless of the time of rhythm conversion. At the end of the observation all patients still in high rate AF were hospitalized for a more accurate management. **RESULTS:** The treatment groups appeared to be comparable as regards largeness, gender and clinical features, while mean age was higher in group A (68.7 vs 60.2). We reported a rhythm conversion in 29 patients (35.4%) in group A and in 54 patients (65.1%) in group P (p<0.0003). The median value of conversion time was 120 minutes in group A and 30 minutes in group P (p<0.0001). The first administration was able to restore the sinus rhythm in 57.5% of the cases in group A and in 80.3% in group P (p<0.02). The incidence of adverse events was very low (4.8%) and fully comparable between the groups. **CONCLUSION:** In conclusion, propafenone appears more rapid and effective than amiodarone and as safe as this one in the management of AF in acute setting. Therefore a wider use of this drug in the emergency department seems able to reach a higher efficiency in terms of rhythm conversion and a significant reduction of hospitalization rate.

T50) Continuous non-invasive hemodynamics using novel finger-cuff technology in emergency department patients : Richard Nowak¹, Ayan Sen¹, Audwin J. Garcia¹, Heidi Wilkie¹, Igor Kupriyanchik¹, Michael Nowak¹, Michele Moyer¹ : 1. Department of Emergency Medicine, Henry Ford Hospital, Detroit, MI, USA.

INTRODUCTION: Hemodynamic optimization is one of the foremost end-points of resuscitation in emergency department (ED) patients presenting with heart failure, sepsis, stroke etc. NexfinHD is a non-invasive continuous cardiovascular monitor based on derivation of brachial arterial pressure(BP) and systemic hemodynamics by reconstruction of the radial arterial waveform using a finger-cuff technique. Rapid and objective hemodynamic measurements in the ED may provide significant value in clinical decision making. **METHODS:** A prospective, blinded study is being conducted to test the blood pressure values as reported by the Nexfin system with the intermittent brachial BP cuff measurement by oscillometric method and to compare the ability of Nexfin hemodynamic measurements and

physician diagnosis to determine hemodynamic status of patients presenting to an urban inner-city ED with suspected triage diagnosis of sepsis, stroke, heart failure and hypertensive emergencies. A convenience sample of patients is being enrolled. The hospital IRB approved the study protocol and informed consent was obtained. Statistical analysis was conducted using paired t-test for comparison between groups and test of significance was set at $p < 0.05$. RESULTS: A total of 220 BP and heart rate readings in 30 patients were analyzed as part of our initial assessment of device reliability. There was no difference between the Nexfin and Cuff systolic BP ($p=0.12$), diastolic BP ($p=0.16$) and heart rates ($p=0.2$). There was significant difference between the clinician and Nexfin estimation of hemodynamics computed from beat-to-beat waveform analysis ($p < 0.001$). The diagnostic accuracy of ED physicians was only 43% when reporting cardiac output and 48% when reporting estimated systemic vascular resistance. CONCLUSIONS: Nexfin continuous non-invasive monitor can aid physicians in understanding the pathophysiology of hemodynamics in ED patients in a more accurate, timely, and cost-effective manner. Along with the valuable provision of trend analysis and increased patient safety, this can help us tailor our strategies for therapeutic interventions.

T51) Adenosine stress perfusion imaging and prediction of myocardial ischemia in low-risk chest pain patients in the emergency setting : Alberto Conti¹, Francesca Innocenti¹, Maurizio Zanobetti¹, Aurelia Guzzo¹, Marta DiDio¹, Claudio Poggioni¹, Beatrice DelTaglia¹, Barbara Paladini¹, Giuseppe Pepe¹, Simone Vanni¹, Simone Magazzini¹, Egidio Costanzo², Chiara Gallini², Riccardo Pini¹ : 1. Emergency Medicine, Careggi University Hospital,, Florence, Tuscany, Italy. 2. Nuclear Medicine, Florence, Tuscany, Italy.

INTRODUCTION: Chest pain (CP) patients (pts) at low-risk of coronary events (CE) eventually have up to 20% of coronary artery disease (CAD). In these pts, the stress-echocardiography shows high sensitivity to diagnose CAD. However, in pts without optimal echocardiographic window, Adenosine stress perfusion imaging (Adenosine-PI) could represent a valuable alternative tool. METHODS: Patients with acute CP (within 24 hours), normal ECG and Troponin I, and without optimal echocardiographic window underwent Adenosine-PI, during 2008-year, in the Emergency Department (ED). Adenosine was given i.v. at 140 mcg/min/kg for 6 minutes, and the single-photon emission computed tomography was performed with 740MBq-technetium-99m-myocardial perfusion tracer sestamibi injected at the 3rd minute. Gated images were evaluated for reversible perfusion defects, and analyzed for transmural perfusion and wall motion abnormalities. The pts with positive images were submitted to angiography, otherwise they were discharged and followed up to 6 months for sudden death, myocardial infarction or need of revascularization. RESULTS: The 60 pts (age 68.36 ± 10.72 year) enrolled had the following coronary risk factors: hypertension 25%, diabetes mellitus 7%, total hypercholesterolemia 10%, active smoker 3%, family history 8%; 10% had body mass index > 30 . Sixteen pts had positive Adenosine-PI, and 9 had coronary stenoses $\geq 50\%$ at angiography (age 68.41 ± 10.75 years); 3 pts needed mechanical revascularization. Forty-four pts had normal Adenosine-PI and none of these had CE at follow-up. Thus, in our series, the sensitivity, specificity, diagnostic accuracy, positive predictive value, and negative predictive value for Adenosine-PI to detect the presence of CAD were 100%, 86%, 83%, 56%, and 100% respectively, and to detect future CE were

100%, 80%, 77%, 19%, and 100%. No major side effects occurred during Adenosine infusion. CONCLUSIONS: In pts with CP, a nuclear scan strategy with Adenosine-PI is safe and effective in differentiating pts at high-risk of myocardial ischemia from those who can be safely discharged.

T52) The predictive factors leading to the decision of urgent coronary recanalization in pre hospital setting : Amira Jaafar¹, Sonia Karma¹, Slim Jedidi¹, Hajer Belakhdar¹, Samir Abdelmoumen¹, Chadly Ghanem¹, Mounir Daghfous¹ : 1. SAMU 01 of Tunis, Tunis, Tunisia.

INTRODUCTION: Strategies for management of the ACS ST+ are well codified to optimize urgent revascularization. The aim of our study was to determine the factors leading medical regulators to decide on reperfusion during the ST+ ACS. METHODS: We retrospectively collected data sheets on the regulation and intervention for patients with ST+ ACS supported by teams of the SMUR of Tunis during 2008. We compared the group of patients reperfused (R) to the group of patients not reperfused (NR). We analyzed demographic characteristics, the caller, the grounds for appeal, the time of the "first medical contact", the time "door to door cardiology", history of coronary artery disease, diabetes, hypertension, smoking, the destination and occurrence of complications. For the univariate analysis, we used the Student's t-test to compare quantitative variables and the X2 test to compare qualitative variables. We then used logistic regression for multivariate analysis. The significance level was set at 0.05. RESULTS: We studied 73 cases coded ST+ ACS (M = 56, F = 17). The mean age of patients was 61.5 ± 13 years. The overall average time of "first medical contact" was 325 ± 482 min. The number of patients who underwent urgent reperfusion was 34 (group R = 46.6%); the number of patients not reperfused was 39 (group NR = 53.4%). On univariate analysis, significant predictors for the decision to perform urgent coronary recanalization were: times of "first medical contact" and "door to door cardiology" (<180 min), the occurrence of a conduction disorder and administration of analgesics. The multivariate analysis identified as significant independent predictor of coronary recanalization decision: the time to "first medical contact" (p <0.0001). CONCLUSION: The time of the "first medical contact" in ST + ACS is a major factor leading to a decision of reperfusion. Any strategy to establish a network of coronary recanalization should aim primarily to shorten this period. It is for this reason that we are currently assessing the factors influencing this time to maximize the number of patients with ST+ ACS we offer revascularization.

T53) INCREASING INCIDENCE OF MYOCARDIAL INFARCTION IN YOUNG ADULTS(<30 YRS) PRESENTING TO ER -IDENTIFICATION,RISK FACTORS,OUTCOME OF DISEASE IN INDIAN POPULATION.

: Vetrivel Ramar¹, Bagyalakshmi Gururajan¹, Saravanan Eswaran¹, Venkatesh A.n¹ : 1. emergency medicine, apollo hospitals,bangalore, Bangalore, India.

BACKGROUND:Heart diseases in Indian population has an alarming rise with presentation 5-10 yrs earlier than other populations around the world .In the presence or absence of atherosclerosis,young adults can experience a myocardial infarction.Notably,young patients presenting with angina to the emergency department are at increased risk to be misdiagnosed

since they do not frequently have traditional coronary risk factors. In this age group, it is predominantly a disease of men.

OBJECTIVES:To analyse the incidence ,risk factors ,severity of coronary involvement in pts with early onset myocardial infarction(age <30 yrs).

to review the management and follow up of such patients

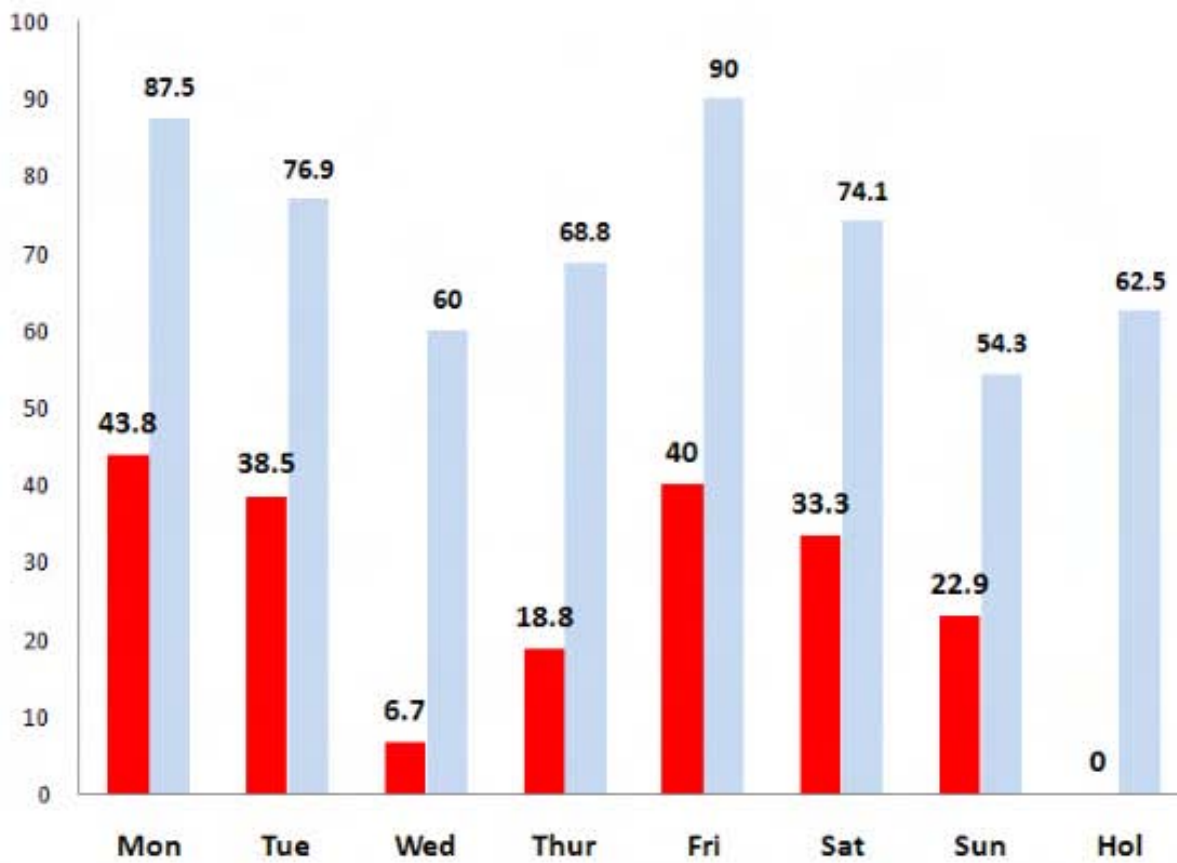
METHODS:This was a prospective study conducted over 12 months(jan-08 to dec -08)in a tertiary care hospital. ECG was done in all pts with new onset angina.pts were categorized into groups with myocardial infarction(MI),unstable angina(UA),stable angina and non cardiac chest pain with serial ecg monitoring and cardiac biomarkers.Pts were categorized into subgroups taking into account age and sex demographics.Pts less than 30 yrs of age with myocardial infarction were included in this study. Detailed history pertaining to risk factors,family history of coronary illness was obtained .Pts were then subjected to coronary angiogram in view of localising the lesion,estimating the severity of occlusion and to search for similarities in angiogram findings in this pt group.**RESULTS:**Young pts with acute myocardial infarction (STEMI & NSTEMI) showed a preponderance of single vessel disease and acute anterior STEMI owing to occluded left anterior descending artery.75% pts had critical coronary disease(occlusion greater than 70%) .

There was a significant attributable association with smoking in most cases .No statistical significance was observed in terms of serum cholestrol,triglyceride levels and family history in this pt group.Percutaneous coronary intervention was the chosen mode of management for pts in this group.survival rate among pts with early onset MI was 100%

T54) The Present Status of Coronary Artery Reperfusion Therapy in Patients with ST Elevation Myocardial Infarction in South Korea : Hanho Doh¹ : 1. Emergency Medicine department, Wonju Christian Hospital, Wonju City, Kangwon do, Korea, South.

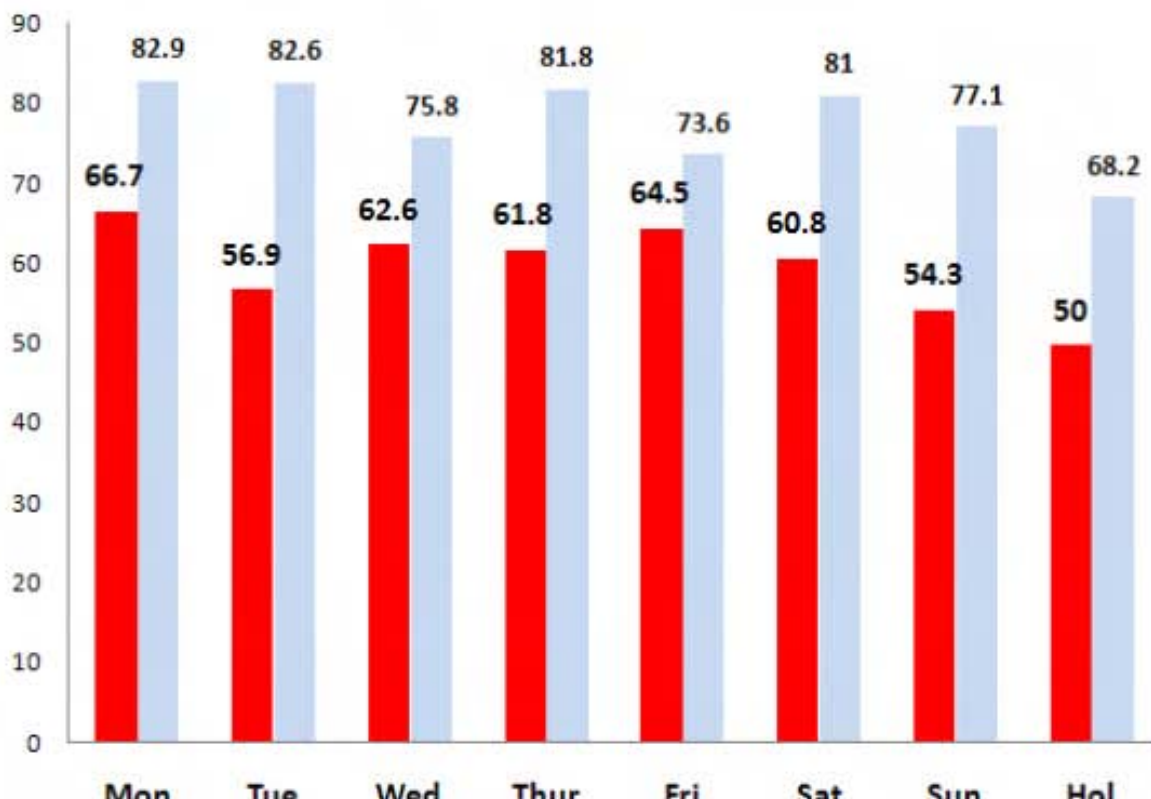
INTRODUCTION: The reperfusion treatments of the occluded coronary arteries are one of the most important interventions in patients with ST elevation myocardial infarction (STEMI). The purpose of this study is to evaluate the present status of coronary artery reperfusion treatment for STEMI in South Korea and to try to find clues for reconstructing it well. **METHODS:** We enrolled STEMI patients from the National Emergency Department Information System (NEDIS) from November 2006 to August 2007. We collected details - date of arrival at emergency department (ED), day of week, kinds of reperfusion treatment, door-to-needle time, door-to-balloon time, final diagnosis, status of patient at discharge, etc - from the medical records of those patients retrospectively. The relationships between door-to-reperfusion time to other factors were verified. The acquired data were analysed by SPSS 12.0 program. **RESULTS:** The number of patients with STEMI was 842; 702 patients were treated with primary percutaneous coronary intervention (PCI) and 140 were treated with thrombolytics. The median value of door-to-balloon time of primary PCI was 80 minutes and the proportion of the patients who were treated by PCI within 90 minutes was 61.1%. However, the proportion of patients treated according to the ideal reperfusion treatment guideline was significantly different from the ED arrival time of patients. **CONCLUSION:** To establish better treatment systems in patients with STEMI, the reinforcement of 24 hour available PCI teams should be made. And moreover the assignment program by government -

to specify heart attack facility, can be the cornerstone. Furthermore to train enough highly skilled and all-day available PCI teams, the investment from government should be continued and increased.



Thrombolytics

- Door to Needle time within 30 minutes
- Door to Needle time within 60 minutes



T55) EFFECTIVENESS OF ECG LOCALISATION OF ARTERIAL BLOCK IN MYOCARDIAL INFARCTION BY EMERGENCY PHYSICIANS -IN RELATION TO ANGIOGRAM FINDINGS-A COMPARATIVE STUDY:can we make a difference? : Vetrivel Ramar¹, Bagyalakshmi Gg¹, Saravanan Eswaran¹, Reddy Bjm¹, Bindhu Lathika¹, Venkatesh A.n.¹ : 1. emergency medicine, apollo hospitals,bangalore, Bangalore, India.

BACKGROUND:Myocardial infarction is the leading cause of cardiac arrest in ER.Knowledge of localising site of block in MI(LAD/RCA/LCC)in ER can make great difference in pt outcome.For instance,in AAMI determining site of LAD occlusion is important because more proximaltheocclusion,less favourable the prognosis.

OBJECTIVES:1. To analyse effectiveness of localising MI and underlying coronary anatomy using various ECG patterns and comparing with angiogram.More information concerning infarct site ,prediction of final infarct size and prognosis can be obtained in initial ECG without extra costs/time.

METHODS:This was a prospective study conducted over 12 months(Jan-Dec2008) in a tertiary hospital in India. ECG was done in all pts with new onset angina.Pt were categorized into myocardial infarction,unstable or stable angina and non cardiac chest pain with serial ecg and cardiac biomarkers.ECG of MI pts were analysed by ER physicians to localize the site of arterial occlusion.Later,the accuracy of diagnosis by ER doctors was compared with the angiogram findings.

FINDINGS: 689 pts with new onset angina were included out of which 160 had MI.(107 AAMI 67%,36 with IAMI 23% and 17 lateral MI)aged between 23-90 yrs (mean age - 54).144/160 underwent angiogram which revealed 97/160 pts with single vessel disease(SVD).In presence of SVD,80% were found to have proximal/mid LAD occlusion.The greatest correlation with respect to accuracy of identification of the site of arterial block with ECG alone was obtained for lesions involving the LAD.80% .

CONCLUSION:Our study indicates that the location of life-threatening coronary artery lesions in patients presenting with signs and symptoms of acute coronary syndromes can be predicted from the initial ECG with a high degree of accuracy.Recognizing the ECG criteria for such lesions has the potential for shortening door-to-reperfusion time and improving patient outcomes.This could make a significant change in pt outcome in hospitals (indian population)where angiogram is not performed as a routine.

T56) The Role of a Chest Pain Assessment Unit in an Irish Emergency Department : Caitriona Mullarkey¹, Ken Maleady¹, Emily O'Conor¹ : 1. Emergency Department, Connolly Hospital , Dublin, Ireland.

INTRODUCTION: The Chest Pain Assessment Unit provides a pathway to rapidly exclude Acute Coronary Syndromes in low risk patients presenting with acute chest pain to the Emergency Department. It also prevents inappropriate ED discharges and reduces in house admission rates. Aims:

To quantify the work of the CPAU and presence of ACS among our patient cohort.

METHODS: A retrospective audit of all patients admitted to the CPAU in 2008 was

performed. RESULTS: Undifferentiated Chest Pain at Triage represented 8.61% of our total ED attendances (32,500 approx.). Four hundred and fifty eight patients were recruited to the CPAU.

Four year trends (from 2004 to 2008) show increased admission rates to the CPAU – from 102 to 458 patients, and a reduction of in-hospital admissions – from 397 patients to 287 patients. The majority of patients (262, 57%) were referred by their GP; 38% self presented to the ED, 5% came via Cardiac Diagnostics. Forty three percent were male, 57% were female. Fifty nine percent of patients had a negative treadmill exercise test (TMET) and were discharged from the ED. Patients with a sub maximal TMET (22%) or positive (9%) TMET were reviewed by Cardiology. Of these, 42 patients had coronary angiograms, 7 patients had a CT angiogram. Thirty angiograms showed lesions consistent with a diagnosis of Acute Coronary Syndrome, representing 6.6% of all admitted patients. Risk factor profiling identified significant rates of hypertension, hypercholesterolemia, smoking, diabetes and physical inactivity. CONCLUSION: The Emergency Department Chest Pain Assessment Unit reduces rates of in-hospital admission and provides a rapid efficient pathway for rule out of Acute Coronary Syndromes.

T57) FACTORS ASSOCIATED WITH DELAY TO CALL FOR EMERGENCY MEDICAL SERVICE (EMS) IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION (AMI) : Amira Jaafar¹, Samir Abdelmoumen¹, Chadly Ghanem¹, Sonia Karma¹, Sana Dridi¹, Hajer Belakhdar¹, Slim Jedidi¹, Mounir Daghfous¹ : 1. SAMU 01 of Tunis, Tunis, Tunisia.

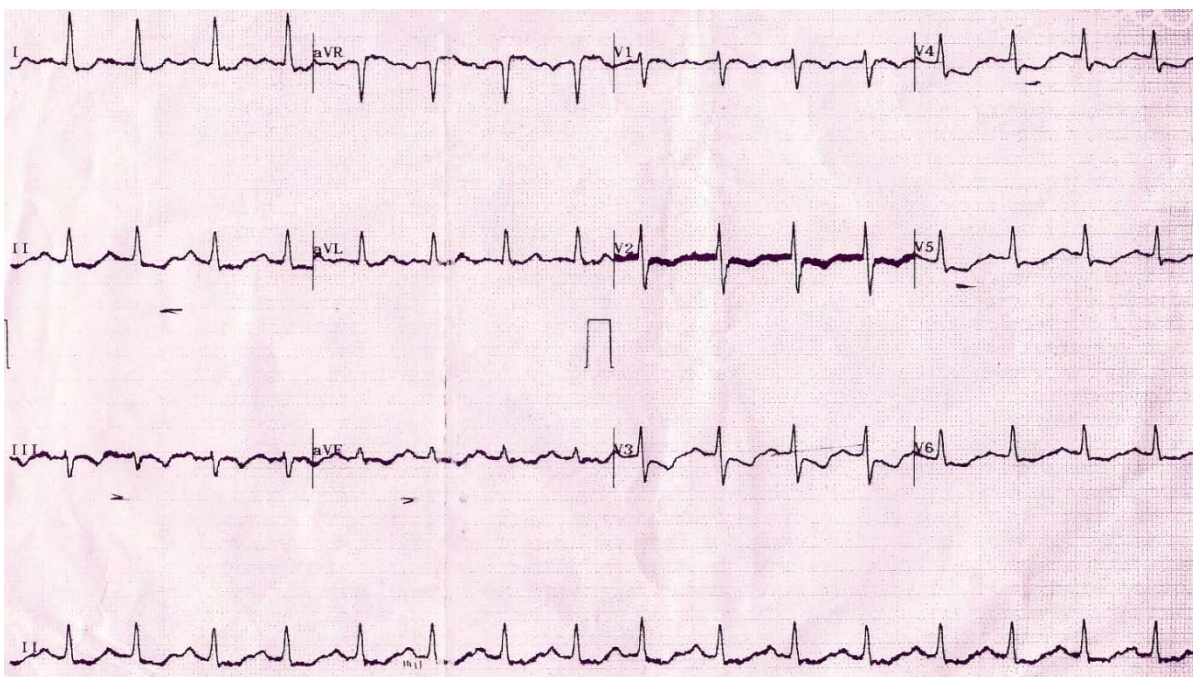
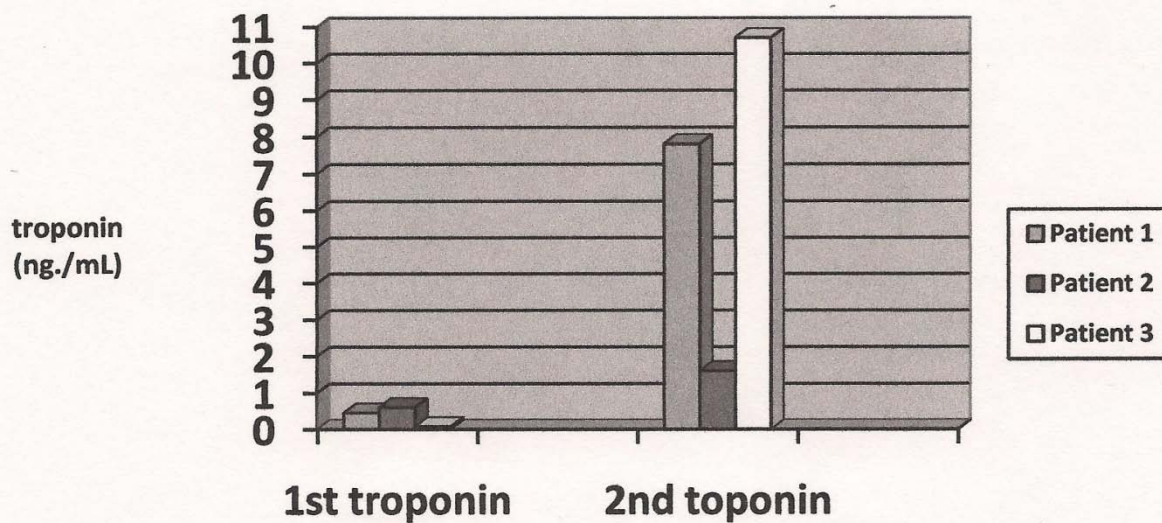
INTRODUCTION: It is established that the delay to “first medical contact” in patients with AMI is important to decision-making of coronary recanalization. The determination of factors influencing the time to appearance to the reception center and regulation of the EMS would optimize campaigns next to patients and family physicians to shorten this period and allowing for early coronary recanalization. The purpose of this study was to determine the factors influencing the time to “first medical contact” in patients with AMI supported by the EMS. METHODS: We collected data sheets on the regulation and intervention for patients with AMI supported by teams SMUR Tunis during the year 2008. We then analyzed the time to first medical contact (Deadline symptomatology early-arrival of the team SMUR) according to the intervention period, the appellant (doctor or not), the ground, place of care and demographic characteristics of patients. We used the Student's t-test to compare quantitative data and the X2 test to compare qualitative data. The significance level was set at 0.05. RESULTS: The analysis focused on 78 patients; 76% male and 24% female. The average age was 61.5 ± 13 years. There was a medical history of coronary artery disease in 18% of patients and diabetes in 27% of cases. The time of "first medical contact" was 325.11 ± 482.24 minutes. This period was significantly shorter when the patient calls for epigastralgia ($p = 0.027$) and longer in the case of acute pulmonary oedema ($p = 0.041$) or conduction disorders ($p = 0.021$). CONCLUSION: The period until "first medical contact" is generally elongated in the intervention area of our EMS and depends on the initial symptoms. Building a network of coronary recanalization can not be conceived without shortening this period to "first medical contact" and this requires educating the patients and coronary training of family physicians.

T58) Acute Non-ST Segment Elevation Myocardial Infarction after Multiple Bee Stings: A Case Series : Salvador E. Villanueva¹, Luis A. Serrano¹ : 1. University of Puerto Rico School of Medicine, San Juan, PR, USA.

BACKGROUND: Acute myocardial infarctions (MI) associated with bee stings are not often reported in the literature. Most reported cases are seen in patients with documented ST segment elevation myocardial infarction. We present a case series composed of three patients that were evaluated at the emergency department after receiving over 100 bee stings. All patients were admitted to the hospital with a diagnosis of Non ST segment elevation MI.

CASES: Patient 1 - A 90 y/o male patient with history of high blood pressure (HBP). No prior history of allergies, coronary artery disease (CAD) or MI. EKG showed sinus tachycardia and ST segment depression on leads V5 and V6. Initial serum troponin I levels were 0.450 ng/ml and four hours later increased to 7.80 ng/ml. (figure 1). Patient 2 - A 33 y/o male with no history of illness or allergies. EKG showed sinus tachycardia with no ST or T wave changes. Initial serum troponin I levels were 0.6 ng/ml and eight hours later 1.6 ng/ml. (figure 1). Patient 3 - An 84-year-old female with past medical history of HBP and hyperthyroidism. No prior history of allergies, CAD or MI. Patient's airway was intact and lungs were clear. EKG revealed sinus tachycardia with ST depression in leads V3-V6 (figure 2). Initial serum troponin I level was 0.069 ng/ml and 12 hours later 10.7 ng/ml (reference value 0.0-0.08 ng/ml). (figure 1). **DISCUSSION:** Bee venom can induce acute coronary syndromes by different pathogenic mechanisms including direct action of the venom constituents on the myocardium or allergic reaction with mediators acting on the coronary vasculature producing thrombosis and vasospasm. The evaluation and treatment of myocardial infarction associated with bee stings has not been clearly established yet. EKG changes are most frequently seen as ST segment elevation or depression. **Conclusion:** This case series highlights the importance of ordering EKG's and measuring serial troponin I levels on patients with multiple bee stings. Those patients with elevated troponin levels or EKG changes should be admitted to the hospital for further evaluation.

Troponin Levels



Patient 3 EKG

T59) Management of Pericarditis in the Emergency Department : Jose Maria Ferreras Amez¹, Victor Abadia Gallego¹, Marco Sarrat Torres¹, Angel Vicente Molinero², Elisa Aldea Molina¹ : 1. Hospital

Miguel Servet, Zaragoza, Zaragoza, Spain. 2. Hospital Royo Villanova, Zaragoza, Zaragoza, Spain.

INTRODUCTION: The study purpose is to evaluate the management of patients with suspected pericarditis in an emergency department. **METHODS:** Retrospective descriptive study of patients attending the emergency department from January to October 2008 who were diagnosed with pericarditis. We designed a standardized data form to collect information on the study variables. The data were analyzed using the SPSS program. **RESULTS:** 23 cases (sample size) were diagnosed with pericarditis (1‰). Mean age 38 ± 14 years. 82% men and 17% women. Past Medical History: without cardiovascular risk factors 56%, smokers 30%, hypertension and dyslipidemia 13%. 21% chest pain clinic. Pain Characteristics: retrosternal 52%, left thorax 13%, oppressive 39%, exacerbated with inspiration 52%, change with position 56%. Pericardial friction rub 4%. Previous catarrhal process 34%. No statistically significant differences ($p > 0.05$) between winter months and the other months. Electrocardiogram displayed widespread upward concave ST-segment elevation in 43%, and was normal in 21%. Troponin was determined in all patients, and was elevated in 13%. Creatine kinase and its MB fraction were determined in 34% of the cases and was elevated in 8%. All patients admitted had elevated troponin concentration. Admitted 34%: 21% in Cardiology service and 8% in the Intensive Care Unit. 52% of the patients were discharged. Echocardiography was performed on 75% of the admitted patients and showed effusion in only 12%. Treatment: 52% ibuprofen, 39% aspirin, 26% colchicine, 13% steroids. **CONCLUSIONS:** 1. The average profile in our sample is a man without any cardiovascular risk factor. 2. There is no seasonal variation in its incidence. 3. All patients with elevated Myocardial enzymes are admitted. 4. The echocardiography is frequently performed on patients, although rarely shows effusion. 5. The most frequent treatment administered is ibuprofen. 6. Most management is done at home.

T60) Hypertensive Crisis in the Emergency Department : Victor Abadia Gallego¹, Jose Maria Ferreras Amez¹, Marco Sarrat Torres¹, Angel Vicente Molinero², Elisa Aldea Molina¹ : 1. Hospital Miguel Servet, Zaragoza, Zaragoza, Spain. 2. Hospital Royo Villanova, Zaragoza, Zaragoza, Spain.

INTRODUCTION: The purpose of this research is to study the epidemiology and management of patients diagnosed with hypertensive crisis. **METHODS:** Prospective and descriptive study of all patients diagnosed in the emergency department with hypertensive crisis (HC), fulfilling the criteria of JNC VII: systolic blood pressure ≥ 210 mm Hg or diastolic ≥ 120 mm Hg. We excluded those under 18 years old and pregnant. The study period was five months. **RESULTS:** 152 HC were collected but only 51.97% fulfilled criteria. 96.22% were hypertensive urgencies and only 3.78% were hypertensive emergencies. 68.36% were women and 31.64% were men. The mean age was 67.46 years, for females the mean was 69.46 years and 63.12 years for men. 34.18% were referred from primary care. 77.22% were previously diagnosed with hypertension, 90.16% were treated by drugs. Regarding the number of antihypertensive drugs received: one drug in 49.09%, 30.91% two drugs, three 18.18% and four 1.82%. The symptoms were: headache 39.24%, 35.44% dizzy, chest pain 8.86%, 5.06% feel sick, 5.06% anxiety. 17.72% were asymptomatic. The tests requested were: 55.7% electrocardiogram, blood test 45.57%, 35.44% chest radiographs, myocardial

enzymes 10.13%, coagulation 10.13% and brain CT 2.53%. 93.67% were discharged, with a recommendation to visit primary care in 95.95% of them and 26.58% were transferred to the Hypertension and Cardiovascular Risk Unit. In 39.19% of them, treatment was changed. Among the 6.33% admitted to the hospital, most were admitted to the service of Internal Medicine (60%) and 20% in cardiology. **CONCLUSIONS:** The HC type hypertensive urgency is a relatively common clinical entity in the emergency department but too much diagnosed. The typical patient is an old woman with known hypertension and treated with a single drug, who has neurological symptoms. Most patients are discharged and sent for control by primary care and in a few cases to specialized care.

T61) Relationship between the time of Acute Myocardial Infarction (AMI) onset and hospital mortality : Ali Arhami dolatabadi¹, Maryam Ozhan¹, Hamid Kariman¹, Hamidreza Hatamabadi¹, Hosein Alimohamadi¹, Ali Shahrmi¹ : 1. Imam Husein hospital emergency department, Shahid Beheshti university of medical sciences, Teran, tehran, Iran.

INTRODUCTION: Our objective was to investigate the relationship between the onset time of AMI and the hospital death rate in Tehran Imam Hussein Hospital. **METHODS:** This descriptive-analytic study was performed in a periodic form in 1386-1387 in Tehran Imam Hussein Hospital. We studied patients diagnosed with AMI in the emergency ward. Standardized forms were used for data collection; data was obtained from the patients, the medical records and their companions. Chi-square test was used to compare the averages. **RESULTS:** Among 210 patients enrolled, 141 were men (67.14%) and 69 were women (32.86%). 144 patients came to the hospital between 4am and 9pm (68.57%) and 66 people (32.03) came to the hospital during the regular time. 26 patients died out of 141 patients. 18 deaths were in presenting 4am to 9pm (69.15%) and 8 patient deaths (30.45%) were between 9am to 4p. Among the 26 patients who died, 15 were women (21.73%) and 11 men (7.8%). Among the 210 patients, 176 had STEMI, and 34 had NSTEMI. 69 patients (39.76%) received Streptokinase (SK). 21 patients died among 176 patients with STEMI, of which 16 patients hadn't received SK (76.66%) and 5 patients had received SK (23.33%). The average time from emergency ward entrance to receive SK was 62.5 minutes, which is two times more than the global standard. The average age for DC was over sixty years. The average for the ladies was 67 and for the men it was 58 years old who came to the hospital. **Discussion:** The number of patients who present to the hospital between 4pm to 9am was more than double who went to the hospital at 9pm to 4am. The number of deaths during the non routine 9am to 4pm was more than two times who went to the hospital during the routine 4pm to 9am. So, more attention should be paid to 4pm to 9am. The number of men who went to the hospital was two times more than the women. **CONCLUSION:** The most attention should be paid to non regular time (4pm-9am), because of a higher death rate and more patients that come to the hospital during those hours.

T62) THE DILEMMA OF THE 50 HOURS : Trigueros N. Ruiz¹, Carrasco M. Gomez¹, Izquierdo Barnes¹ : 1. Hospital Reina Sofia, Murcia, murcia, Spain.

CASE: A 79 year old patient consulted for feeling palpitations in 50 hours of evolution. As

antecedents are: DM and dyslipidemia, and endometrial adenocarcinoma seven days prior to the actual reason for consultation. The patient reported the sensation of palpitations of two days of evolution, without chest pain or dyspnea, or courtship vegetative associated symptoms. On arrival in the ED, her physical examination was: Conscious and focused. TA: 140/80. T 36.5 C. ACP: arrhythmic without murmurs. Abd: soft and depressible, not painful on palpation, Midline laparotomy scar. EEII: No edema. Complementary tests were as follows: ECG: ACxFA RVM with 157 bpm. Chest Rx: no infiltration or condensation. Breast costofrénicos free. BQ:CPK 27, Trop I 0.0. Coagulation: INR 1.04. Blood: 9700 WBC, Hb 12.4, plat 308,000. The patient remained in the Emergency Observation for monitoring and control of heart rate. It was decided to administer diltiazem to try to stop the tachycardia, but with no results. We considered the possibility of pharmacological cardioversion with flecainide vo assessing risks/benefits of such action, although the patient was not anticoagulated because of the risk of bleeding after surgery. After choosing this option, the patient returned to RS at 90 bpm and was hemodynamically stable. The patient was admitted to the Service of Cardiology and after good performance, was discharged with a diagnosis of ACxFA in the immediate postoperative period, without pharmacological treatment or anticoagulant. DISCUSSION: Atrial fibrillation (AF) is the most common sustained cardiac rhythm disturbance. It is the most common arrhythmia in the post, together with atrial flutter (40%). It is estimated that restoration of sinus rhythm by pharmacological cardioversion with ibutilide or through direct electrical cardioversion in patients who develop postoperative AF is preferred. It makes sense to administer antiarrhythmic drug to attempt to maintain sinus rhythm in patients with postoperative AF, recurrent or resistant, as for other patients who develop AF. Also the administration of amiodarone is a reasonable option for pharmacological cardioversion of AF.

T63) CPAP for congestive heart failure in patients without admittance criteria in ICU : Eva Salvo¹, Begoña Arcos¹, Amparo Valero¹, Carlos del Pozo¹, Belen Salvador¹, Luisa Lopez¹ : 1. Emergency, Hospital Dr. Peset, Valencia, Valencia, Spain.

INTRODUCTION: The aim of this study was to clarify the role and tolerance of CPAP applied early in acute respiratory insufficiency due to acute congestive heart failure in patients without admittance criteria in ICU. METHODS: Retrospective evaluation of clinical history evaluating all patients admitted at Emergency Room during 1 year; including all registered patients treated with CPAP at resuscitation area. Patients with admittance criteria in ICU were excluded. RESULTS: The use of Boussignac's CPAP was recorded in 22 patients. The use of CPAP devices in our ER is approximately 150 per year; the sample represents about 1/6 of the total equipment employed. The average age of the group is 76 year old, 11 males and 11 females. Most frequent co-morbidity observed was hypertension followed by diabetes mellitus. Previous cardiopathy appears in 86.36% cases; emphasizing ischemic cardiomyopathy as the most prevalent and cardiac valvulopathy. Most frequent symptom was dyspnoea. At the arrival to the ER the clinical recorded information was: Average respiratory rate of 32 bpm. Almost all patients presented with O2 saturation below 90% despite conventional treatment with O2. The suspected etiology of the cardiac failure is known in half of the cases: high blood pressure, bronchial infection, non-ST-segment elevation acute coronary syndrome and rapid atrial fibrillation. In all cases the treatment with

CPAP started in the resuscitation area in the ER. The treatment was successful (clinical recovery, gasometrical improvement, absence of deaths in the emergency unit, admission in hospital after stabilization) in 95.45% cases. The average duration of the treatment was 6 hours, and was associated with conventional treatment with drugs. CONCLUSIONS: The treatment with Boussignac's CPAP, besides the clinical success, had an excellent tolerance among patients without admittance criteria in Intensive Care Units. We believe that patients involved in this study, those with congestive heart failure without admittance criteria in ICU, and the severity of symptoms, improved promptly and effectively, respecting the rule of not using aggressive management.

T64) THE COMPARISON OF THE SERUM STEROID LEVELS OF THE PATIENTS WITH OR WITHOUT ATRIAL FIBRILLATION: CASE CONTROL STUDY : Aytul Atac¹, Reyhan Ucku², Hakan Topacoglu¹ : 1. Dokuz Eylul University School of Medicine, Dept. of Emergency Medicine, Izmir, Turkey. 2. Dokuz Eylul University, School of Medicine, Dept of Public Health, Izmir, Turkey.

INTRODUCTION: A study in the literature revealed that atrial fibrillation (AF) in patients treated with corticosteroids after cardiovascular surgery is less evident as compared to control group. The purpose of this study is to determine whether there is any difference of serum cortisol levels in patients with AF as compared to a control group. METHODS: This study was conducted as one-on-one matched study at the university based emergency department, after getting approval of the URB, in order to determine intermediate differences in the corticosteroid levels between case group and the control group. 138 cases were included in this study. The cases were selected from patients who came to ER at the age of 18 or above that exhibited AF on their ECG with no exclusion criteria. The control group individuals were selected amongst the cases who came to ER on the same day, same gender and age +/-3 by using simple randomized sampling method. Serum blood steroid levels were compared between these two groups. Chi-square and t-test were used for analysis. RESULTS: The mean age of 138 patients was 71±12 and 82 of them (59.4%) were women. The mean blood steroid levels were 25.1±20.1mg/dL in group with AF and 21.4±14.0mg/dL in the control group (p:0,214. No difference was also found between the AF patients and the control groups when we defined steroid levels as normal and abnormal based on diurnal rhythm (Chi-square, p:0.609). Although there was significant statistical differences in the mean value of blood steroid levels between the patients with paroxysmal and chronic AF (31.4±22.5 and 20.7±17.3, t-test,p: 0.040), there was no statistical differences between the two groups as defined above (p:0.44). CONCLUSION: When we compared the patients with AF and normal population there is no significant difference, but when PAF and chronic AF is compared we found meaningful difference and this may show steroid levels can be an etiologic factor in acute AF. However, we couldn't find expected intermediate differences. We recommend conducting further studies on this issue with more patients.

T65) Sudden Adult Death Syndromes and Physician Recognition of Electrocardiographical Features Suggestive of Risk : Gerard S. O'Connor¹ : 1. Personal, Cork, Ireland.

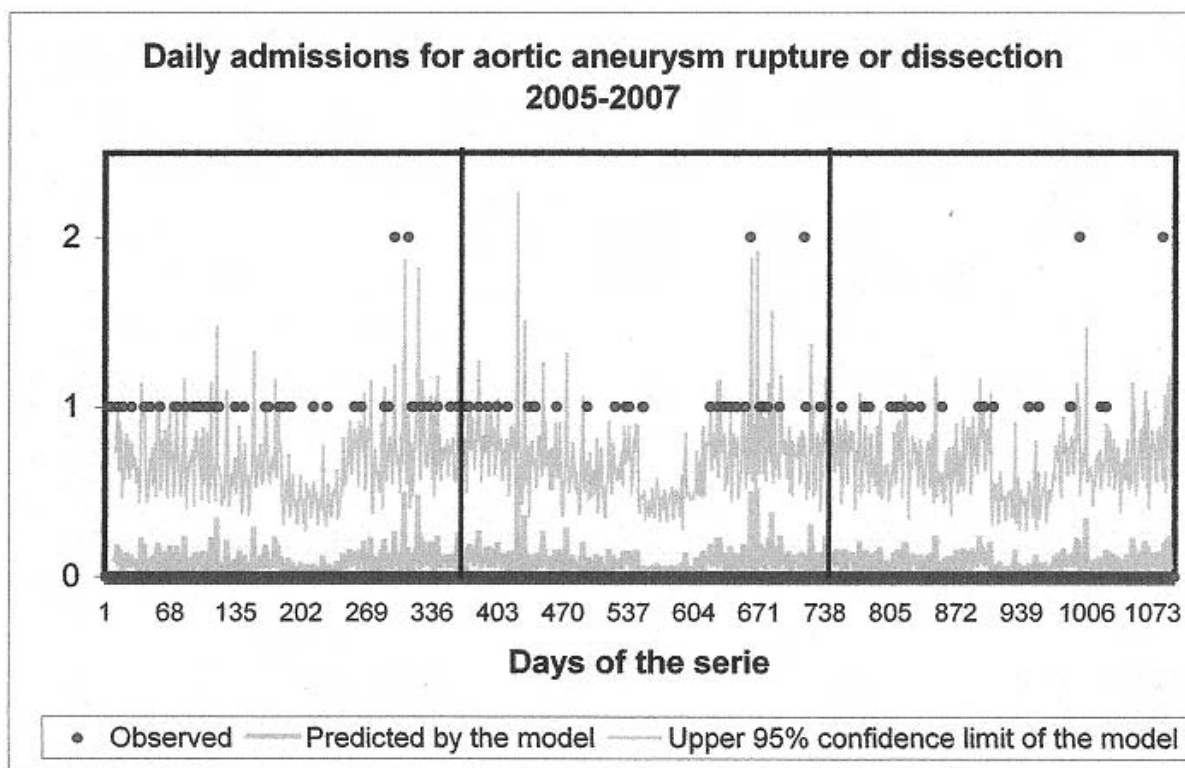
BACKGROUND: The objective of this study was to assess the diagnostic accuracy of Irish

hospital based doctors in interpreting electrocardiographs consistent with sudden cardiac death syndromes in the young athlete. **METHODS:** A questionnaire based survey containing 40 representative and normal ECGs was developed with the supervision of a regional cardiologist with specific arrhythmia expertise. The questionnaire survey was administered to 34 hospital based doctors working either wholly or partly in Emergency Departments. Participation was on a purely voluntary and anonymous basis and completion of the questionnaire was accomplished in both hard copy and electronic form. **RESULTS:** A total of 1360 individual ECG encounters was thus generated. False negative diagnostic rates (ECGs incorrectly assigned as normal) of 28% were observed. The rate of correctly classified ECGs was approx 60% (Normal and Abnormal classified correctly). There were low rates of correct recognition and diagnosis of some of the major SCD ECG syndromes. LVH, Long QT syndrome, ARVC, Short QT, Brugada syndrome and Monomorphic VT are respectively correctly classified and diagnosed 40%, 17%, 1.5%, 6%, 7% and 56% of the time in this study. This is similar to previous published work on physician diagnostic accuracy with regard to ECGs. **CONCLUSION:** In summary I performed an assessment survey of diagnostic accuracy in interpreting electrocardiographs with sudden cardiac death syndromes among hospital-based doctors. This revealed high false negative rates of incorrect diagnosis and low rates of accuracy in correctly classifying various conditions. This could indicate low awareness of these relatively rare conditions among hospital based doctors and possibly point to a significant skill deficit with regard to ECG interpretation There is also considerable scope for further study in this area given the paucity of previous published research in this field.

T66) Weather, air pollution, and hospital emergency admissions for aortic aneurysm : Antonio Valdivia¹, Carmen del Arco¹, Guillermo Fernández¹, Marta Ruiz¹, Myrian Pichiule¹, Pilar Gallego¹ : 1. Hospital Universitario de La Princesa, Madrid, Madrid, Spain.

INTRODUCTION: There are few articles that evaluate the effect of environmental factors on non traumatic aortic aneurysm rupture or dissection (ARD). We analysed the relation between weather, air pollution, and emergency admissions due to this condition. **METHODS:** Time series analysis of daily admissions for ARD (ICD-9 code 441) in the emergency department of a third level hospital over the period 2005-2007. We evaluated the association with daily outdoor humidity, temperature, wind speed, atmospheric pressure (AP), particulate matter, nitric dioxide, sulphur dioxide and carbon monoxide (CO), as well as their daily change compared to the day before admission. After a bivariate analysis, we performed a multivariate Poisson model for each pollutant with adjustment for holidays period, day of the week and weather covariates, and final adjustment with autoregressive terms. The association measure was the risk ratio (RR), with a 95% confidence interval (95% CI). **RESULTS:** There were 100 admissions for ARD, 86% were men. The median age was 72 years and the mortality was 31%. The only weather variable independently associated to daily admissions was the AP change: 1.0% more risk for each 10 Pascal rise above 300 Pascal of positive difference (RR 1.01, 95% CI 1.00-1.02) in the most complex model, and 1.4% in the simplest one, with a lower risk for ARD on holidays (July-August: RR 0.48, 95% CI 0.23-1.00) and weekends (RR 0.59, 95% CI 0.36-0.98). We did not find any significant association with pollutant levels or changes. **CONCLUSION:** These results suggest that changes in atmospheric pressure may transiently increase the risk of ARD. The knowledge about effects of AP

changes on aortic aneurysm is scarce. However, our findings are concordant with recent studies on intracerebral and subarachnoid hemorrhage. Our findings about holidays and weekends may be due to known seasonal variations in our reference population. The lack of significant results for pollutants could be due to a low sample size in our series. With the lack of existing evidence, this suggests the need for more studies about this condition.



T68) The Importance of Non-Invasive Ventilation in the Treatment of Cardiogenic Pulmonary Edema :
Sorana Truta¹, Cristian Boeriu², Adriana Homana¹, Bogdan Csillag¹, Peter Gordon³ : 1. Emergency Department, Mures County Emergency Hospital , Targu Mures, Mures, Romania. 2. University of Medicine and Pharmacy, Targu Mures, Mures, Romania. 3. New York University School of Medicine/Bellevue Hospital Center, New York, NY, USA.

INTRODUCTION: Cardiogenic pulmonary edema (CPE) is a frequently encountered pathology in the practice of emergency medicine. The treatment varies depending upon the patient's clinical status at the time of presentation to the ED. A large number of the patients seen in our emergency department have significant cardiac and hypertensive histories. Many of these patients are unable to be compliant with their medical treatment. For this reason, many patients are in extremis upon their arrival to our ED and historically they have frequently required endotracheal intubation, mechanical ventilation, and either admission to

the Intensive Care Unit or prolonged care in the ED until extubation. Since July 2007 our Emergency Department has benefitted from the availability of new ventilators that are capable of providing non-invasive ventilation. The use of this treatment method for patients with cardiogenic pulmonary edema has significantly lowered the number of intubations and the number of these patients ultimately admitted to the Intensive Care Unit. **METHODS:** We performed a retrospective, observational study on patients presenting to our emergency department, the Mures County Hospital Emergency Department, with cardiogenic pulmonary edema during the years 2006, 2007, and 2008. **RESULTS:** Forty-five patients with cardiogenic pulmonary edema were intubated in 2006, representing 29.65% of a total number of 152 patients with PE, out of which 18 (11.84%) were admitted in the ICU. We compared these numbers with the data collected in 2007 (144 patients with PE out of which 27 (18.75%) were intubated, 11 (7.64%) received non-invasive mechanical ventilation, only 10 (6.94%) were admitted in the ICU) and 2008 (125 patients with PE out of which 20 (16%) were intubated, 16 (12.8%) received non-invasive mechanical ventilation, only 6 (4.8%) were admitted in the ICU). **CONCLUSION:** We observed a significant reduction in the number of patients that required intubation and admission to the ICU between 2006 and 2007-2008.

YEAR	# CPE Patients	# Intubations (%)	# Non-Invasive Ventilations (%)	# ICU Admissions
2006	152	45 (29.65)	N/A	18 (11.84)
2007	144	27 (18.75)	11 (7.64)	10 (6.94)
2008	125	20 (16)	16 (12.8)	6 (4.8)

T69) Acute infective endocarditis: Rupture of chordae tendineae of mitral valve along with perforation of its posterior leaflet in an intravenous drug abuser : Georgios Dimitrakakis¹, Ali Kordzadeh¹, Navroz Masani¹, Ulrich Von Oppell¹ : 1. Cardiothoracic Surgery, University Hospital of Wales, Cardiff, Cardiff, United Kingdom.

BACKGROUND: Infective endocarditis (IE) is an uncommon but life-threatening infection. Despite improvements in diagnostic tools, antimicrobial therapy, surgical techniques and management of complications, patients with IE still have substantial morbidity and mortality. This paradox is explained by a progressive evolution in risk factors; while classic predisposing conditions such as rheumatic heart disease have been all but eradicated, new risk factors such as intravenous drug use, sclerotic valve disease in elderly patients, use of prosthetic valves, and nosocomial diseases have emerged. **CASE:** A 35-year-old male with drug addiction/abuse presented to our Accident & Emergency department with symptoms of IE, renal impairment, CVA along with residual neurological deficit (left leg) and was treated with antibiotics. On the 8th post admission day he developed an acute deterioration (NYHA IV & pulmonary oedema) due to rupture of tenontae chordae of the mitral valve plus perforation of its posterior leaflet. While on inotropic support the patient underwent emergency mitral valve replacement (Medtronic Mosaic Porcine 31mm) with a predictive operative mortality of 64.58% on logistic EuroSCORE. The patient completed 22 days of antibiotics with an uneventful recovery and was referred to another hospital for convalescence. 27 months follow up showed no recurrence of IE and there was a significant

improvement of his neurological status. **DISCUSSION:** The multi-disciplinary approach and direct involvement of emergency physicians, cardiologists, cardiac surgeons and anaesthetists is of paramount importance in successful management of these challenging cases and one should always consider the evolution and considerable variation of non-classical presentation of IE.

T70) Post myocardial infarction ventricular septal defect: “Another” emergency case in Accident and Emergency department : Georgios Dimitrakakis¹, Ali Kordzadeh¹, Ihsan Mahmood Rafie¹, Sivagnanam Kathikeyan¹, Ulrich Von Oppell¹ : 1. Cardiothoracic Surgery, University Hospital of Wales, Cardiff, Cardiff, United Kingdom.

BACKGROUND: Post infarction ventricular septal defect or rupture is a rare but fatal mechanical complication of myocardial infarction (0.2-1%). The event occurs 2-8 days after an infarction and often precipitates cardiogenic shock. The differential diagnosis of post-infarction cardiogenic shock should exclude free ventricular wall rupture and rupture of the papillary muscles. Without any intervention most patients die within the first week; almost 90% die within the first year. Reports indicate that fewer than 7% of patients are alive after 1 year. The reported 30-day operative mortality rates range from 21 to 42%. To avoid the high morbidity and mortality associated with this disorder, patients should be assessed by multi-disciplinary team regarding the therapeutic approach. (Emergency surgery and concomitant coronary artery bypass or percutaneous closure). **CASE:** A 78-year-old male admitted to A&E with severe shortness of breath (NYHA Class IV). ECG, echo and coronary angiography showed a posterior post-myocardial infarction ventricular septal defect. The patient underwent an urgent open heart operation (repaired of VSD with bovine pericardial patch through a left ventriculotomy and CABG). The predictive operative mortality was 70% with EuroSCORE. The patient had an uneventful post-operative recovery apart from permanent pacemaker insertion and discharged on the 12th postoperative day. 24 months follow up indicates NYHA Class I-II. **DISCUSSION:** The early detection and the prompt planning for the definitive treatment of post infarction ventricular septal defect are very significant for good outcome of these demanding cases.

T71) INTEGRATED HEALTH CENTERS: INITIAL APPROACH TO CHEST PAIN ACCORDING TO SELF-DEVELOPED PROTOCOLS : Sergio Navarro Gutierrez¹, Oscar Martínez Ferris¹, Silvia Castells Juan¹, Luis Manclús Montoya¹, Almudena Lluch Sastrigues¹, Vicente Cebrián¹ : 1. Emergency Department, Hospital de la Ribera, Alzira, Valencia, Spain.

BACKGROUND: Problems associated with overcrowded emergency departments (ED) continue to be a major health problem in Spain. **DISCUSSION:** Health authorities have developed a prior step to the ED with the creation of Integrated Health Centers (IHC). These centers coordinate the Primary Care and the daily activity of family physicians with other specialists working at outpatient facilities as well. In addition to this, the emergency assistance is warranted by family physicians with special skills on emergency and acute cardiologic care. Even though IHC are not considered our emergency physicians, they have basic laboratory as well as simple radiology support, and are a key part of the emergency

health system. Acute heart pathologies are mainly first treated by our IHC emergency physicians. An important amount of patients complain about cardiorespiratory problems and improving coronary diseases treatment is one of our goals considering that we do not have cardiology nor intensive care support in these centres and patients with acute heart diseases should be transferred to our hospital, miles away from these IHC. We present here how patients complaining of chest pain are initially assessed and treated according to self-developed protocols.

T72) MANAGEMENT OF ATRIAL FIBRILLATION AND FLUTTER IN EMERGENCY

DEPARTMENT: A FIVE YEARS EXPERIENCE. : Antonio Bonora¹, Antonio Maccagnani¹, Domenico Tavella², Eugenio Sanzone¹, Giorgia Franchina¹, William Mantovani³, Paolo Benussi², Claudio Pistorelli¹ : 1. Emergency Department - University of Verona, Verona, Veneto, Italy. 2. Department of Cardiology - University of Verona, Verona, Veneto, Italy. 3. Department of Medical Health - University of Verona, Verona, Veneto, Italy.

INTRODUCTION: According to the recent trend toward a more effective management of atrial fibrillation in the acute setting, we reviewed the results achieved in our emergency department. **METHODS:** From January 2004 to December 2008 we attempted cardioversion in 841 patients (398 males, 443 females; mean age 67 ys, range 24-97) observed for recent-onset atrial fibrillation (AF), flutter (FL) or fibrillo-flutter (FF). **RESULTS:** Nearly half of the patients (420) suffered from one or previous paroxysmal AF or FL, while 175 (20.8%) were submitted to an attempt at cardioversion, either electrical or medical. AF was the most frequent arrhythmia (719 pts, 85.5%), while 88 (10.5%) and 34 pts (4%) presented a FL and FF respectively. The most reported symptom was cardiopalmus (727 pts, 86.4%). Only 25 patients (2.9%) were submitted to electrical shock (CVEL), while in all others (97.1%) we tried to restore the sinus rhythm by antiarrhythmic drugs as follows: amiodarone 405 pts (48.1%), propafenone 304 pts (36.1%), flecainide 120 pts (14.3%). The median age of these treatment group was: amiodarone 72 years (range 25-97), flecainide and propafenone 63 years (range 24-87). Overall conversion rate was 56.7% (477 pts) and the drug treatment was successful in 53.9% of the cases (453 pts). As regards the treatment, conversion rates were: CVEL 96% (one sudden relapse after cardioversion), flecainide 81.6%, propafenone 67.4%, amiodarone 38.5%. Median conversion times were 71, 86 and 211 minutes respectively. The incidence of adverse events was very low (32 cases, 3.8%), but only 4 out of these could be considered as serious. The sinus rhythm being restored or heart rate controlled, 499 patients (59.3%) were discharged, while the other 342 (40.7%) were hospitalized, either for persistent high rate arrhythmia (31.1%) or for associated morbidity (9.6%). **CONCLUSION:** In conclusion, there is room for a more and more effective and safe management of these arrhythmias in the acute setting. Moreover, a wider resort to class 1 agents and CVEL is expected to increase conversion rate and decrease the need for hospitalization.

T73) Functional chest pain unit: The activity in our Emergency Department : Francisco J. Salvador Suárez¹, Ana Beltrán Sánchez¹, Nieves Atienzar Herráez¹, Javier Millán Soria¹, Miriam Sanchis Cuenca¹, Angel Torregrosa Sanchis¹, Marina Valiente Bayarri¹, Carles Pérez García¹ : 1. Emergency Department, Lluís Alcanyis Hospital from Xàtiva, Xàtiva, Valencia, Spain.

INTRODUCTION: Chest pain is one of the most frequent reasons for consultation in Emergency Departments (ED). It is essential in those whose origin is a cardiac reason that a correct diagnosis be established and an appropriate treatment be introduced as soon as possible. **Objectives:** To describe the activity performed of the Functional Chest Pain Unit (CPU) during the first 6 months of operation; To analyze the features of the patients included and evaluate the degree of achievement of the established protocol. **METHODS:** We conducted an observational descriptive retrospective study June 2008 - February 2009. **Variables:** age, sex, cardiovascular risk factors (hypertension (HBP), diabetes (DM), obesity, toxic habits), patient previous history of ischemic cardiopathy, pain features, ECG, myocardial injury markers (troponin I (TnI) and CPK at his arrival and 6 hours later), exercise test outcomes, emergency stay and hospital admissions. **RESULTS:** 32 patients included. Average age 59,50 years (21,9% female; 78,1% males). HBP (37,5%), DM (6,3%), obesity (12,5%), smokers 21,9%, ex-smokers 21,9%, no smokers 31,3% and no included smoking history in 25%, patient previous history of pathology (31,3%). No previous history of cardiovascular disease reported in 12,5%. Pain features: oppressive (84,4%); radiated (56,3%), nausea and diaphoresis (46,9%), related with effort (46,9%), pain length (a 60 minutes median from 56,3% of the cases). Neither pain length nor its relation with exercise was reported in 43,8% and 18,8% respectively. 100% ECG at admission to the ED (normal in 56,2%). TnI in 100% and CPK in 96,9% on admission. TnI 87% and CPK 81,3% 6 hours later. Exercise test positive in 21,9%, negative in 62,5% and inconclusive in 9,4%. Exercise test not performed in 2 cases. Admitted to the hospital 34,4% of the included patients. Average emergency stay: 19,08 hours. **CONCLUSION:** The CPU allows us to detect early the patients with acute coronary syndrome as well as the identification of those patients of low risk who could be treated in an ambulatory setting with an average stay in our Service not exceeding 24 hours.

T74) Fibrinolysis of the ischemic stroke: Our activity in the Emergency Department : Francisco J. Salvador Suárez¹, Angel Torregrosa Sanchis¹, Marina Valiente¹, Javier Millán Soria¹, Raquel Ibañez Pacheco¹, Ana Beltrán Sánchez¹, Nieves Atienzar Herraez¹, Carles Pérez García¹ : 1. Emergency Department, Lluís Alcanyis Hospital from Xàtiva, Xàtiva, Valencia, Spain.

INTRODUCTION: The ischemic stroke constitutes the third most common cause of death and the number one cause of serious disability with an incidence in Spain of 150-350 cases/100.000 inhabitants year. A third of the patients reported die in a year and another third survive with a permanent disability. **Objectives:** To assess the intervention in patients with ischemic stroke selected from the Emergency Department(ED) who received fibrinolysis after the beginning of the Stroke Code in September 2005; and To analyze results and complications. **METHODS:** We conducted an observational descriptive retrospective study from Sept 2005 - Dec 2008. **Included:** age from 18 to 80 years; clinical diagnosis of ischemic stroke with a punctuation < 22 in the NIH stroke scale (NIHSS) (established symptoms > 30 minutes); gap time since onset of symptoms less than 3 hours; a normal previous cranial CT or with early signs of ischemic stroke in less than 33% of the middle cerebral artery territory. **Excluded:** contraindications established by the European Medicines Agency in 2002. Rt-PA 0.9 mg/kg fibrinolysis (10% intravenous bolus over 1 minute followed by 90% over 60-minute infusion) **RESULTS:** 8 patients included (4 males; 4 women). Average age 54.50

years (41-74). 2 or more risk factors were present in 75% of the patients (hypertension 65.5%; smoker 50%; diabetes 37.5%; dyslipidemia 37.5%). Symptom onset-to-door time 1,22h (0,39-2,48); door-to-CT time 29 minutes (10-46). Door-to needle time 1,19h (0,41-1,35). Symptom onset-to-needle time 2,20h (1,20-3,25). Suggestive initial findings of ischemia by CT in 7 cases. 11 points at the admission NIHSS (6-21). 1 hemorrhagic transformation; 1 pneumonia; 1 limited fever.

CONCLUSIONS: Time in the early attention and selection of patients and the accomplishment of the complementary tests in the ED is fundamental in the management of ischemic stroke. It is essential for action as a whole of all the services involved in the initial evaluation of these patients. Though the series assessed is small only one adverse serious event (hemorrhagic transformation) took place in one of the patients.

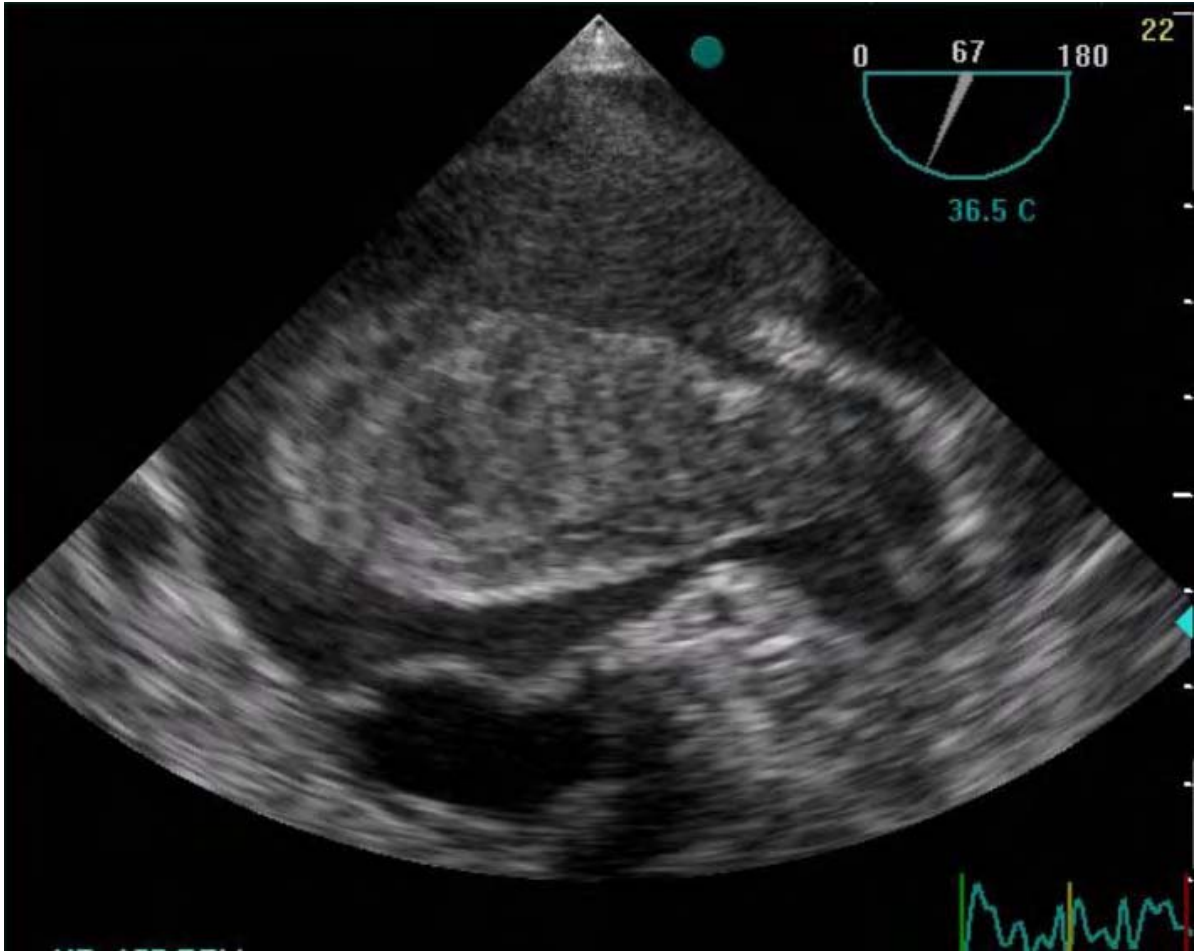
T75) Acute limb ischemia: How far do we go? : [Ali Kordzadeh](#)¹, [Taha BinEsmael](#)¹, [Georgios Dimitrakakis](#)¹, [Nihal E. Kulatilake](#)¹ : 1. Cardiothoracic Unit, University Hospital of Wales, Cardiff, United Kingdom.

CASE: An 83-year-old male with 2 years history of atrial fibrillation (AF) and therapeutic international normalized ratio (INR) of 2.4 was referred to our emergency department with an acute onset of right leg ischemia for which he underwent a successful embolectomy. The patient was commenced on warfarin 22 months ago and had retained therapeutic INR levels for this period. Post-operative transthoracic echocardiography (TTE) revealed a spherical (6.5cm× 4.5cm) mass in the left atrium with ejection fraction of 55% in an otherwise asymptomatic patient.

It was defined as a pedunculated, solitary and smooth mass with possible attachment to the intra-atrial septum. Pre-operative diagnosis of left atrial myxoma on the basis of clinical and echocardiographic features was made and patient was planned for emergency resection of the mass under cardiopulmonary bypass.

Intra-operative transoesophageal echocardiography (TOE) demonstrated an attachment to the left atrial appendage therefore the mass was removed through left atrial approach as opposed to trans-septal route. The patient had an uneventful recovery and was discharged on the 4th postoperative day. To our surprise histological examination of the mass revealed an organized thrombus with no evidence of myxoma despite its clinical and morphological features.

DISCUSSION: Echocardiographic diagnosis of an intracavitary mass in this case was a challenge, but a very important and an essential clinical decision as serious complications like further systemic embolisation and sudden death especially in this asymptomatic patient could have resulted in devastating results. It is of paramount importance that all thrombo-embolic events irrespective of their clinical presentation and age should be thoroughly and strictly investigated.





T76) The emergency management of a cardiac thrombus in a patient with previous mitral valve replacement : Georgios Dimitrakakis¹, Ali Kordzadeh¹, Noah Howes¹, Christian Tan¹, Nihal E. Kulatilake¹ : 1. Cardiothoracic Surgery, University Hospital of Wales, Cardiff, Cardiff, United Kingdom.

BACKGROUND: Prosthetic valve thrombosis is a life threatening complication of cardiac valve surgery. The clinical presentation is related to the size and relative site of the thrombus and symptoms may include dyspnoea, chest pain, fatigue, fever and an embolic event. Thrombolysis, heparin infusion and surgical resection are the mainstays of treatment. **CASE:** A 33-year-old female with past medical history of rheumatic fever, mitral valve repair followed by replacement (2 times) and permanent pacemaker in situ presented to our casualty department with complains of chest pain, shortness of breath and pre-syncope episodes. Echocardiography revealed a large left atrial mass, severe aortic valve stenosis and EF of 25%. The patient underwent an urgent re-do median sternotomy for removal of a left atrial mass and aortic valve replacement along with an inspection of mitral valve. The predictive

operative mortality was 13.5% on logistic Euroscore. She had an uneventful recovery and at 3 months follow up echocardiography demonstrated no recurrence. Histology showed an organised thrombus and myxoid degenerative changes of the aortic valve. **DISCUSSION:** This case report highlights the need for: 1. High index of suspicion when these patients are admitted to A&E department with shortness of breath and angina like symptoms. 2. Early multi-disciplinary approach (early involvement of emergency physicians, cardiologist and cardiothoracic surgeons) is highly recommended for diagnosis and management of these patients. 3. Close and strict monitoring of anticoagulation in patients with valve replacement and low ejection fraction. 4. Early and regular follow up with echocardiography.

T78) SERUM ANGIOTENSIN CONVERTING ENZYME ACTIVITY, TOTAL ANTIOXIDANTS AND ASCORBIC ACID IN IRANIAN PATIENTS WITH CORONARY ARTERY DISEASE : Farideh Ghazi¹, Bahareh Dabirmanesh² : 1. Molecular biology, Iran University of Medical Sciences, Tehran, Tehran, Iran. 2. Iran University of Medical Sciences, Tehran, Tehran, Iran.

INTRODUCTION: Coronary artery disease (CAD), also known as atherosclerotic heart disease is a leading cause of morbidity and mortality throughout the world. In this study we investigated the relationship between coronary artery disease (CAD), angiotensin-converting enzyme (ACE) activity, ascorbic acid and serum antioxidant status in patients with coronary artery disease. **METHODS:** A group of 65 patients with angiographically defined coronary artery disease (CAD) and 60 normal control subjects were studied. The activity of angiotensin-converting enzyme (ACE) was determined by the reversed-phase high performance liquid chromatography (HPLC) to separate and quantify hippuryl- histidyl-Leusin (HHL) and hippuric acid (HA). We used Ferric Reducing Ability of Plasma (FRAP Assay) as a measure of antioxidant power. Serum ascorbic acid concentration was determined photometrically. **RESULTS:** The present study demonstrated significant differences in ACE activity, antioxidant and ascorbic acid between CAD cases and normal controls. **CONCLUSIONS:** Increased levels of ACE activity in serum have been related to coronary artery disease. Serum ascorbic acid concentration and total antioxidant capacity were significantly decreased in CAD patients compared with controls.

T80) Factors Associated with Outcome in Patients Presenting to an Emergency Department with Severe Pulmonary Oedema : Subhan Anwar¹, Lee Barnsdale², Alasdair Gray³ : 1. Edinburgh University, Edinburgh, United Kingdom. 2. ISD, NHS, Edinburgh, United Kingdom. 3. Royal Infirmary of Edinburgh, Edinburgh, United Kingdom.

INTRODUCTION: Heart failure is a major cause of mortality and morbidity. Previous studies have derived models for predicting outcome using data from the complete spectrum of patients with acute decompensated heart failure syndromes. Acute cardiogenic pulmonary oedema (ACPO) accounts for 50% of heart failure presentations in emergency settings. This is the first study to specifically investigate variables that may predict hospital length of stay, 7 and 30 day mortality in ACPO. **METHODS:** This study used data from a single centre of a previous randomised multi-centre study investigating the effectiveness of non-invasive ventilation in ACPO, the 3CPO trial. 40 potential predictor variables were selected and

multiple linear regression and binary regression used to model length of stay or mortality at 7 and 30 days. RESULTS: In 162 patients, predictor variables for hospital stay included age, heart rate, ischaemia on 12 lead ECG, level of critical care admission, prior diagnosis of hypertension and serum potassium level. The model for 7-day mortality revealed diastolic blood pressure, heart rate, PaCO₂ and glucose as predictors of death. Predictors of death at 30-days included diastolic blood pressure, PaCO₂, haemoglobin, and ischaemia in 12 lead ECG. CONCLUSION: This preliminary study shows that predictors of outcome in ACPO are somewhat different from those that predict outcome across the complete spectrum of acute decompensated heart failure syndromes. Larger studies are needed to further elicit and develop a clinical prediction tool model in ACPO.

T81) Myocardial Infarction or Aortic Dissection? : Cristina Balasan¹, Manuela Camelia Elena Guran¹, Bogdan Dinu¹, Elena Craescu¹ : 1. Bucharest Emergency Hospital, Bucharest, Romania.

CASE: We report a case of a 68 year old male without cardiac risk factors, who presented with anterior chest pain with epigastric and posterior radiation. The symptoms appeared 4 days prior to the admission, but was aggravated within the last 6 hours. The ECG revealed ST-segment elevations and T-wave inversions in DIII and aVF, but the rapid immunoassay of cardiac biomarkers (CK-MB, Troponin I and Myoglobin) was negative. Also on clinical examination the patient had a murmur of aortic insufficiency. The lack of cardiac risk factors, the negative results of cardiac enzymes (despite the 6 hours of pain) with ECG suggestive for myocardial infarction and the presence of the aortic insufficiency led to the suspicion of an aortic dissection. The transthoracic echocardiography revealed a dilated aortic root with an intimal flap consistent with a DeBakey type II aortic dissection which was confirmed by the contrast-enhanced computed tomography. The CT-scan didn't reveal the coronary dissection which would have explained the ECG changes, so a cardiac catheterization was mandatory. This final investigation discovered that the right coronary artery was compressed by the intimal flap of the aortic dissection. The patient was admitted to the Cardiovascular Surgery Intensive Care Unit and underwent surgical treatment with favorable post-operative evolution and was discharged after 2 weeks. DISCUSSION: The thorough clinical and paraclinical examination for differential diagnosis between myocardial infarction and aortic dissection is of utmost importance, in this case the administration of thrombolytic therapy would have been fatal. The particularity of this case was the extrinsic right coronary artery obstruction. The cardiac biomarkers didn't elevate during the admission because of the precocity of the surgical treatment.

T82) How to apply the guidelines in a district general hospital? : Adelina Pereira¹ : 1. Emergency, ULISM - Matosinhos; Hospital Pedro Hispano, Matosinhos, Portugal.

BACKGROUND: In 2008, the European Society of Cardiology (ESC) as well as other societies and organizations, published the guidelines to management of acute myocardial stroke in patients presenting with persistent ST-segment elevation (STEMI). In Portugal, the National Institute of Medical Emergency (INEM) - responsible for the pre-

hospital assistance - using the emergency number 112, created a project which makes possible an easier early detection of STEMI in those patients who call claiming to suffer of thoracic pain, and then transport them to an hospital with available Percutaneous Coronary Interventions (PCI) technique.

But, what to do with patients that come to our hospital directly, with thoracic pain?

How to quickly detect the patients with acute myocardial stroke and STEMI, if the thoracic pain is one of the most frequent complaints in our ED?

We don't have PCI in our hospital, so the option is Fibrinolytic Therapy (FT) and the goal is to start it within 30 min in those patients (door-to-needle time).

We studied the most frequent reasons which delay the beginning of thrombolytic therapy and we worked on the first three: initial approach to the patient; correct interpretation of the ECG, transportation of the patient to de Thoracic Pain Unit (TPU), where the FT is administered.

So we created a project called "quick way for the STEMI".

METHODS: To validate it we have done a retrospective study, comparing the time: door-to-needle between January – March of 2008 (without the project) and, January – March of 2008 (with the project).

RESULTS and DISCUSSION:

The project and respective results are presented and discussed in this work; it represents our effort to provide FT on time for these patients.

T83) IMPROVING DOOR-TO-BALLOON TIMES IN PATIENTS PRESENTING TO THE EMERGENCY DEPARTMENT FOR ACUTE ST ELEVATION MYOCARDIAL INFARCTION VIA DIRECT ACTIVATION BY ED PHYSICIAN OF PERCUTANEOUS CORONARY INTERVENTION : Marcus E. Ong¹, Kim Poh Chan¹, Alice Ruth T. Bergin¹, Venkataraman Anantharaman¹, Swee Han Lim¹, Terrance SJ Chua², Soo Teik Lim², Aaron SL Wong², Sultana Papia¹, Pin Pin Pek¹ : 1. Dept of Emergency Medicine, Singapore General Hospital, Singapore, Singapore. 2. National Heart Centre, Singapore, Singapore.

INTRODUCTION: Aims: To reduce door-to-balloon times in primary percutaneous coronary intervention (PCI) for patients presenting to the Emergency Department (ED) of an urban hospital with acute ST-elevation myocardial infarction (STEMI), by the adoption of Emergency Physician activated PCI. **METHODS:** Conducted a prospective, interventional, before-after study of patients who presented at the ED with the diagnosis of STEMI and required PCI. All consecutive cases with diagnosis of STEMI from Oct 2006 to July 2008 were eligible. In the 'Before' phase, all ST elevation cases were referred to the Department of Cardiology. In the 'After' phase, PCI was activated by the ED physician directly via hospital's operator. **RESULTS:** We recruited a total of 481 patients with acute STEMI who underwent acute PCI. Of these, 195 and 286 cases were in the 'Before' and 'After' phases respectively. There were no significant differences in age, gender, race and history of heart disease in the 2 phases. However, more cases presented during office hours in the 'Before' (57.9%) than 'After' (48.6%) phases. The mean DTB times ($p < 0.01$) for 'Before' and 'After' phases were 100.5mins (S.D. 25.5 mins) and 87.3mins (S.D. 23.4mins); median times were 96mins and 82mins, respectively. Subgroup analysis by office or after-office hours presentation revealed that the mean DTB times for 'Before' and 'After' phases were 94.9mins (S.D. 27.2mins) and 87.1mins (S.D. 24.1mins); median times were 88mins and 81mins,

respectively during office hours ($p=0.05$), and 109.7 mins (S.D. 20mins) and 87.8mins (S.D. 20mins); median times were 111mins and 84mins, respectively during after-office hours ($p < 0.01$). CONCLUSION: Direct ED physician activation of PCI resulted in a significant reduction in door-to-balloon time, especially during after-office hours presentation. Direct ED physician activation of PCI should be adopted as “standard of care” for all STEMI cases who meet the criteria for PCI.

T84) Does D-dimer Testing Reflect Pretest Probability Assessment? : Christopher Kabrhel¹, D. Mark Courtney³, Jason Donnelly², Christopher Moore⁴, Peter Richman⁵, Kristen Nordenholz⁶, Michael Plewa⁷, Howard Smithline⁸, Daren Beam⁹, Jeffrey A. Kline¹⁰ : 1. Emergency Medicine, Massachusetts General Hospital, Boston, MA, USA. 2. New York Medical College, Valhalla, NY, USA. 3. Northwestern University, Chicago, IL, USA. 4. Yale University, New Haven, CT, USA. 5. Mayo Clinic, Scottsdale, AZ, USA. 6. University of Colorado, Denver, CO, USA. 7. St. Vincent Mercy Medical Center, Toledo, OH, USA. 8. Baystate Medical Center, Springfield, MA, USA. 9. East Carolina University School of Medicine, Greenville, NC, USA. 10. Carolinas Medical Center, Charlotte, NC, USA.

INTRODUCTION: Current recommendations suggest D-dimer testing is appropriate only for patients with low or intermediate pretest probability (PTP) of pulmonary embolism (PE). Clinical decision rules, such as the Wells score, have been developed to determine PTP and therefore guide D-dimer testing. We sought to determine if D-dimer testing is performed in accordance with PTP assessment. **METHODS:** Prospective, observational study of Emergency Department (ED) patients evaluated for PE in 12 U.S. centers. All centers had D-dimer testing available in the ED. Data necessary to calculate the Wells Score and an unstructured assessment of PTP were prospectively collected, and compared to whether a D-dimer assay was performed. Results are reported as means and proportions. **RESULTS:** We enrolled 7940 patients, 5328 (67%) of whom were female. Mean age was 49 ± 17 years. Race was: 4541 (57%) white; 2704 (34%) black; 482 (6%) Hispanic and 213 (3%) other. Insurance status was: 3482 (45%) private; 1128 (14%) Medicare; 906 (12%), Medicaid; 693 (9%) self-insured and; 1731 (22%) other or unknown. PE was diagnosed in 547 (7%). Overall, 5907 (74%) patients had a D-dimer ordered. D-dimer tests were performed in 4430/5482 (80%) patients with Wells < 2 , 1366/2201 (62%) with Wells 2-6 and 111/257 (43%) with Wells > 6 . When unstructured PTP was used, results were similar: D-dimer tests were performed in 4405/5357 (82%) patients with PTP $< 15\%$, 1258/2087 (60%) with PTP 15%-40% and 236/488 (48%) with PTP $> 40\%$. **CONCLUSIONS:** D-dimer testing is commonly performed, but testing does not reflect PTP assessment. Approximately 25% of (low and intermediate pretest probability) patients in whom D-dimer testing is recommended did not have testing, while 43% of (high pretest probability) patients in whom testing is not recommended did undergo D-dimer testing.

T85) Predictive value of bedside echocardiography to prognosticate one month outcome in low risk unstable angina (UA) patients : Davood Farsi¹, Mani Mofidi¹ : 1. emergency department, Iran University of medical sciences, Tehran, Iran.

INTRODUCTION: Our objective was to investigate the predictive value of bedside

echocardiography to prognosticate one month outcome in low risk unstable angina (UA) patients. **METHODS:** One hundred and forty patients with low risk UA were selected and underwent bedside echocardiography prior to discharge. Any abnormal echocardiographic findings including dyskinesia and ejection fraction less than 40% was recorded. Every single patient was prospectively followed up following discharge for a period of one month in regards of reoccurrences of chest pain with cardiac origin. **RESULTS:** Abnormal echocardiographic findings were noticed in 18 patients. Among them, 7 patients re-experienced cardiac pain (40%) following discharge. Surprisingly, only six patients out of the group with normal bedside echocardiographs re-experienced chest pain with cardiac origin (4%) after discharge. **CONCLUSION:** We found bedside echocardiography as a useful and reliable predictor for one month outcome among patients with low risk unstable angina, given that bedside Echocardiography is available and easily doable in the emergency setting. We propose echocardiography as a reasonable approach in management planning of low risk unstable angina.

Frequency of risk factors in patients with low risk unstable angina:

Risk Factor	Number (Percentage)
Hypertension	36 (25.7)
Hyperlipidemia	23 (16.4)
Smoking	31 (22.1)
Positive familial history	25 (17.9)
Previous cardiac problems	20 (14.3)
Diabetes mellitus	29 (20.7)

Recurrence of cardiac pain in one month period after discharge

Echocardiography Result	Abnormal outcome in one month follow-up Number/total (percentage)
Normal Echocardiography	6 / 122 (4%)
Abnormal Echocardiography	7 / 18 (40%)

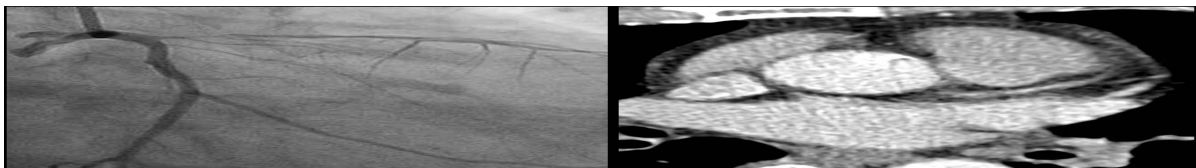
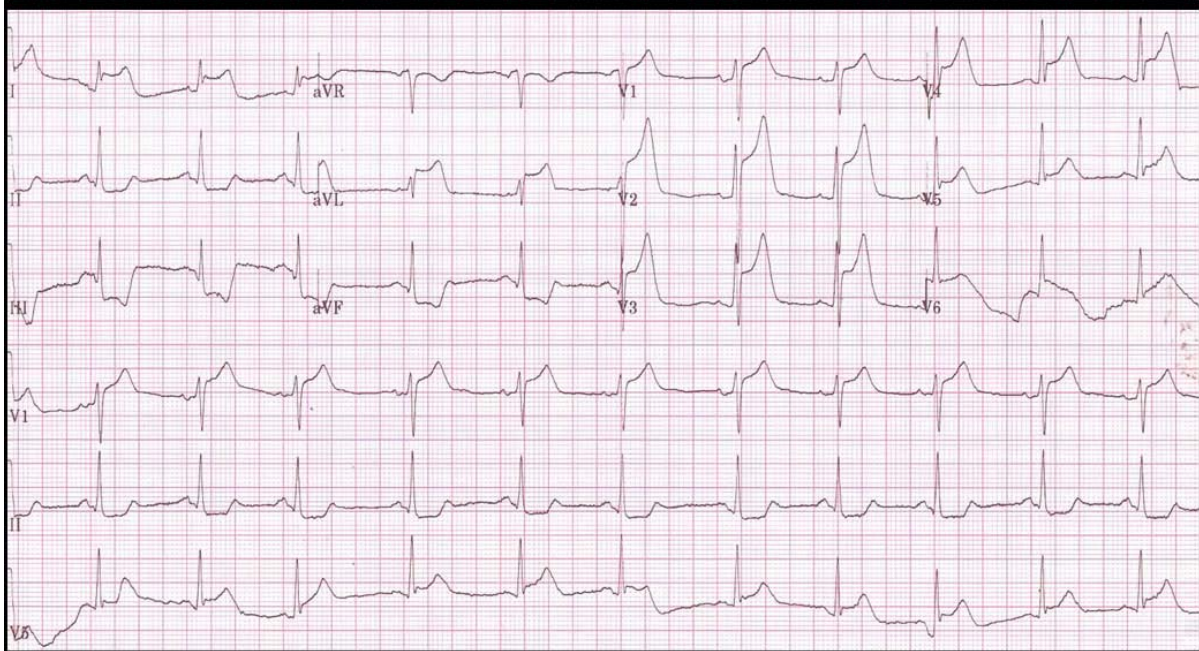
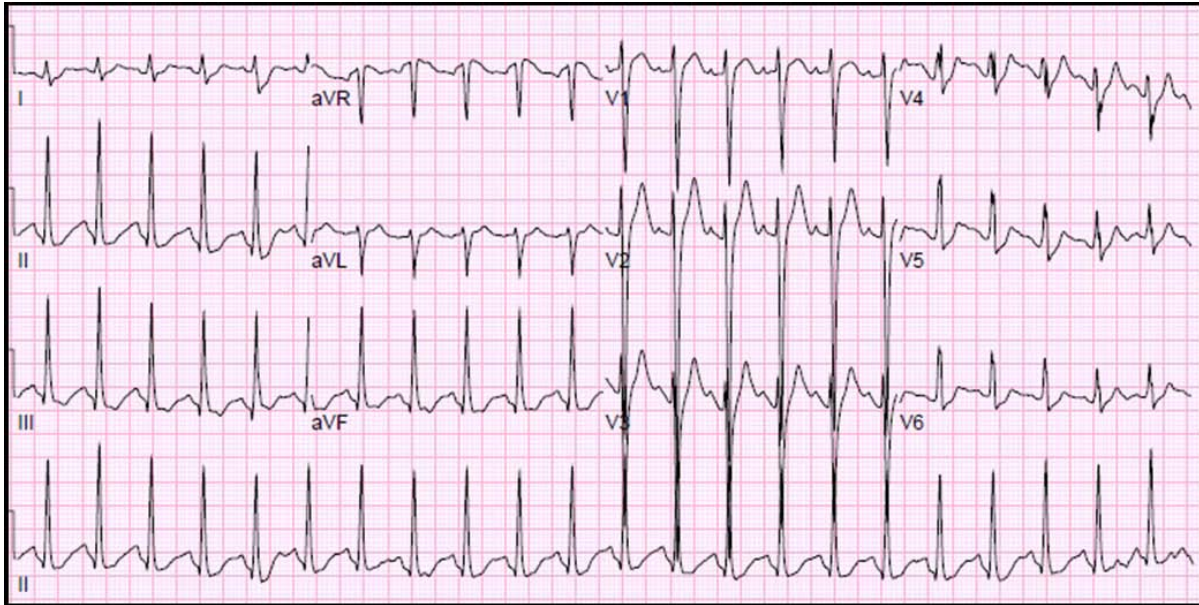
T86) Allergic myocardial infarction in emergency department: two case reports : Minjoung Kim¹, Joonmin Park¹, Sung Pil Chung¹, Junho Cho¹ : 1. Yonsei University college of medicine, seoul, Korea, South.

BACKGROUND: Allergic reaction can induce acute coronary syndrome by inflammatory mediators released from activated mast cells in the heart. It is known as Kounis syndrome or allergic angina/myocardial infarction. We report here two cases of Kounis syndrome in emergency department(ED). **CASES:**

Case 1 - A 22-year old man was hospitalized in a private clinic because of herniated lumbar disc. He had an allergy to drugs such as pain killer and antibiotics. After he received fentanyl intravenously, angioedema occurred. He felt chest pain radiating to back with allergic

symptoms on the following day, and he was transferred to our ED. An electrocardiogram (ECG) revealed sinus tachycardia (134 beats/min) with ST segment abnormality (Fig.1 upper). Initial cardiac enzymes were normal, but increased after 12 hours: CK-MB 10.5 mcg/L, troponin-T 0.2mcg/L. 3D-coronary CT angiography demonstrated no stenotic area in the coronary arteries. The patient recovered completely and was discharged on the 4th day.

Case 2 - A 54-year old man who has minimal coronary artery obstructive disease was transferred from the department of radiology to the ED. He felt flushing, shortness of breath and chest discomfort immediately after injecting contrast media for 3D-coronary CT angiography. On admission, blood pressure was 40/30 mmHg and pulse 100 beats/min. He complained of severe chest pain and allergic symptoms. An ECG (Fig.1 lower) revealed elevation of ST segment in V2-V5 with reciprocal change in II, III and aVF. Coronary angiography demonstrated a subtotal occlusion of proximal left anterior descending(LAD) coronary artery, and stent was inserted (Fig.2 left). Troponin-T was elevated to 0.04mcg/L after 8 hours. After the stent insertion, the patient's condition has improved and the elevation of ST segment was normalized. The results of coronary CT angiography were diffuse spasm of proximal-LAD with myocardial bridging in mid-LAD (Fig.2 right). DISCUSSION: Kounis syndrome should be considered when acute chest pain is accompanied by allergic symptoms.



T87) Risks to Remember when Admitting Patients with Low risk Acute Coronary Syndrome in Clinical

Decision Units : Muhammad A. Majeed¹, Kiran Bhatt¹, Ashes Mukherjee¹ : 1. ED, nhs, Dudley, United Kingdom.

INTRODUCTION: Objectives: 1) Are we correctly following the guidelines to score risk of Acute Coronary Syndrome (ACS)? 2) Are we investigating them appropriately? 3) Are we monitoring them according to the guidelines? 4) Are they being properly discharged? 5) Have we got appropriate documentation? **METHODS:** We collected a list of 50 patients with low risk chest pain from CDU and analysed their notes. **RESULTS:** The results are quite striking. 44% of the patients were high risk but kept in the CDU. None of the patients had cholesterol levels done before sending them to CDU which might identify them as high risk in the presence of other factors. 55% of the patients had no documentation of FH. 77% of the patients had high cholesterol. None of the patients had 4-6 hourly ECGs performed. **DISCUSSION:** Ischemic heart disease is one of the leading causes of death all over the world. Therefore to make the decision that this patient just needs a bed and no monitoring has to be very careful. Findings that many patients are admitted in CDU with high risk chest pain is not safe for patients as they might develop some more and severe ischemia this time and they are not being monitored, since they are treated as low risk. Even if we have to admit low risk ACS patients they still need serial ECG every 4-6 hrs. Most of these patients had no documentation of cholesterol levels in their notes, which in many cases will make them a high risk patient. We didn't find any documentation what medications like aspirin, and statins, the patients were prescribed after discharge from CDU but still awaiting ETT. We think we should use CDU as place for patients who do not need any significant monitoring or care.

T88) SERUM ANGIOTENSIN CONVERTING ENZYME ACTIVITY, TOTAL ANTIOXIDANTS AND ASCORBIC ACID IN IRANIAN PATIENTS WITH CORONARY ARTERY DISEASE : Farideh Ghazi¹, Bahareh Dabirmanesh¹, Mohsen Firoozraye¹ : 1. Genetics and Molecular Biology, Iran University of Medical Sciences, Tehran, Iran.

INTRODUCTION: Coronary artery disease (CAD), also known as atherosclerotic heart disease is a leading cause of morbidity and mortality throughout the world. In this study we investigated the relationship between coronary artery disease (CAD), angiotensin-converting enzyme (ACE) activity, ascorbic acid and serum antioxidant status in patients with coronary artery disease. **METHODS:** A group of 65 patients with angiographically defined coronary artery disease (CAD) and 60 normal control subjects were studied. The activity of angiotensin-converting enzyme (ACE) was determined by the reversed-phase high performance liquid chromatography (HPLC) to separate and quantify hippuryl- histidyl- Leusin (HHL) and hippuric acid (HA). We used Ferric Reducing Ability of Plasma (FRAP Assay) as a measure of antioxidant power. Serum ascorbic acid concentration was determined photometrically. **RESULTS:** The present study demonstrated significant differences in ACE activity, antioxidant and ascorbic acid between CAD cases and normal controls. **CONCLUSIONS:** Increased levels of ACE activity in serum have been related to coronary artery disease. Serum ascorbic acid concentration and total antioxidant capacity were significantly decreased in CAD patients compared with controls.

T89) Association of Cardiac Risk Factors and Myocardial Infarction in ED Patients with Non-Diagnostic ECG : Hamidreza Hatamabadi¹, Parvin Kashani¹, Ali Arhami¹, Abbas Afshar¹, Hamid Kariman¹, Ali Shahrami¹, Hossein Alimohammadi¹ : 1. Emergency Medicine, Emam Hossein Hospital, Tehran, Iran.

INTRODUCTION: The objective of this study is to investigate the association of cardiac risk factors and the risk of acute myocardial infarction in ED patients with non-diagnostic ECGs. **METHODS:** An observational study will be conducted in an educational hospital at Shahid Beheshti University in Iran-Tehran during a period of one year. In this study, patients with symptoms suggestive of acute myocardial infarction including: chest pain, dyspnea, palpitation, syncope, cardio vascular accident, nausea, vomiting, vertigo, loss of consciousness will be enrolled. Demographic, historical features and risk factors such as age, sex, diabetes, hypertension, hyperlipidemia, renal failure, positive family history of coronary artery disease, smoking, substance abuse, alcohol use in past 24 h, cocaine use in past 48 h will be recorded. Non-diagnostic ECGs include these categories: normal, non specific, early repolarization, abnormal without ischemia (old bundle branch block, LVH, prolonged intervals). A final diagnosis of acute MI will be determined by CK-MB and troponin I. **CONCLUSION:** In the past, study in patients with non-diagnostic ECG only hypertension was significantly more prevalent in those who ruled-in for AMI and cardiac risk factor has limited clinical value in diagnosing of AMI in the ED setting, especially patients older than 40 years. We are going to investigate this association in our study.

T90) Referral to Cardiology Department of Patients with NSTEMI-ACS Prognosis from a Regional Hospital : Belén Durán Rosende¹, M.Teresa García Sanz¹, Jaime Grande Freire¹, María Gayoso Couce¹, Manuel José Vázquez Lima¹ : 1. Emergency, Hospital do Salnés, Vilagarcía de Arousa, Pontevedra, Spain.

INTRODUCTION: Chest pain is the most typical expression of ACS, as well as the most frequent request of medical attention at the Emergency Department (ED) (5-20%). A quick differentiation between myocardial ischemia and other etiologies is crucial, since outcome depends on treatment precocity. All main studies published agree on a greater ischemic event rate decrease associated to invasive strategy other than to conservative treatment. Patients are referred to a different hospital for further diagnosis or treatment, due to the lack of resources in the referring centre. **METHODS:** We reviewed the histories of all patients who arrived in 2008 at the ED with chest pain suggesting myocardial ischemia. We analyzed the cases referred to the Cardiology Department in the referral hospital, complying with the following criteria: chest pain suggesting myocardial ischemia, ECG changes and/or myocardial damage marker elevation. Those STE-ACS patients admitted by the Hemodynamic Department for primary PTCA were excluded. **RESULTS:** Number of patients referred: 78 (55% male); Male age: median: 71 (interquartile range: 59-76); Female age: median: 70 (R 64-75); Emergency Department Diagnosis: NSTEMI-ACS 57 (73%), STE-ACS 9 (12), Chest Pain 7 (9%), PAD 2 (3%), effort angina 1, Prinzmetal 1, AF with rapid RV 1; (Diagnosis concordance 73%); High risk patients: 70%. Procedures: Coronariography 61 (78%); PTCA 45%; Coronariography delay (days): median: 5 (R 3-7). **CONCLUSIONS:** 74% of patients referred to the Cardiology Department were diagnosed with NSTEMI-ACS (70% high risk). The diagnosis concordance is high. High risk NSTEMI-ACS patients diagnosed by the Regional Hospital ED could be directly

referred to the Hemodynamic Department without the intervention of the Cardiology Department.

T91) Referral to Cardiology Department of Patients with NSTEMI-ACS Prognosis from a Regional Hospital : M Teresa García Sanz¹, M Teresa García Sanz¹, Belén Durán Rosende¹, Jaime Grande Freire¹, María Gayoso Couce¹, Manuel José Vázquez Lima¹ : 1. Emergency, Hospital do Salnés, Vilagarcía de Arousa, Pontevedra, Spain.

INTRODUCTION: Chest pain is the most typical expression of ACS, as well as the most frequent request of medical attention at the Emergency Department (ED) (5-20%). A quick differentiation between myocardial ischemia and other etiologies is crucial, since outcome depends on treatment precocity. All main published studies agree that a greater decrease in ischemic event rates is associated with an invasive strategy other than conservative treatment. Patients are referred to a different hospital for further diagnosis or treatment, due to the lack of resources in the referring centre. **METHODS:** We reviewed the histories of all patients who arrived in 2008 at the Emergency Department with chest pain suggesting myocardial ischemia. We analyzed the cases referred to the Cardiology Department in the referral hospital, complying with the following criteria: chest pain suggesting myocardial ischemia, ECG changes and/or myocardial damage marker elevation. Those STE-ACS patients admitted by the Hemodynamic Department for primary PTCA were excluded. **RESULTS:** Number of patients referred: 78 (55% male); Male age: median: 71 (interquartile range: 59-76); Female age: median: 70 (R 64-75); Emergency Department Diagnosis: NSTEMI-ACS 57 (73%), STE-ACS 9 (12), Chest Pain 7 (9%), PAD 2 (3%), effort angina 1, Prinzmetal 1, AF with rapid RV 1 (Diagnosis concordance 73%); High risk patients: 70%; Procedures: Coronariography 61 (78%); PTCA 45%; Coronariography delay (days): median: 5 (R 3-7). **CONCLUSIONS:** 74% of patients referred to the Cardiology Department were diagnosed with NSTEMI-ACS (70% high risk). The diagnosis concordance is high. High risk NSTEMI-ACS patients diagnosed by the Regional Hospital ED could be directly referred to the Hemodynamic Department without the intervention of the Cardiology Department.

T92) Treatment value of fibrinolysis in acute coronary disease : Hamid Kariman¹, Mohamad Kalantari meibodi¹, Hamidreza Hatamabadi¹, Ali Omraninava¹, Ali Arhamidolatabad¹ : 1. emergenc, sbmu, Tehran, tehran, Iran.

INTRODUCTION: Cardiovascular incidents are the most common cause of deaths in the whole world; in this case MI is the most life-threatening occurrence which is mostly caused by plaque rupture or erosion with superimposed non occlusive thrombus, so early treatment with antithrombotic agents plays an important role in reducing the number of deaths caused by MI. This study is designed to assess the mean time between the entrance of patients with suspected MI to EMAM HOSSEIN hospital and the initiation of the treatment.

METHODS: This study is an interpretive-descriptive, cross-sectional study, carried out on 110 patients admitted to EMAM HOSSEIN emergency department in the year 1386. The data were obtained through checklists, which were filled out by patients families or the emergency staff. To compare the average and results, Student's t-test and analysis of variance was used.

RESULTS: In 110 cases, 31 cases were female, 79 cases were male. The mean time was 66/39 minute and was 73/74 minute for female patient, 63/5 minute for male patient, in addition 49/92 minute in morning shift, 69/78 minute in the afternoon shift and 72/68 minute in the night shift, which has significant analytical diversity. **CONCLUSION:** This mean time called Door To Needle time in valid scientific leagues in the whole world is just 30 minute. In comparison with our study, it is obviously 2 times faster and also is more in female than males and in the afternoon and night more than morning shift. Different variants like emergency staffs, physicians, patient factors, environmental-physical factors may explain this difference and some other factors can cause this difference which should be closely discussed and followed to offer the clues.

T93) Association of Cardiac Risk Factors and the Risk of Acute Myocardial Infarction in ED Patients with Non-diagnostic ECGs : Parvin Kashani¹, Abbas Afshar¹ : 1. Emergency Medicine, Shahid Beheshti University, Tehran, Iran.

INTRODUCTION: Objective: To investigate the association of cardiac risk factors and the risk of acute myocardial infarction (AMI), in ED patients with non-diagnostic ECGs.

METHODS: An observational study was conducted in an educational hospital in Shahid Beheshti University during a period of two years. In this study, patients with symptoms suggestive of AMI including: chest pain, dyspnea, palpitations, syncope, cerebrovascular accident, nausea, vomiting, vertigo, or loss of consciousness were enrolled.

Demographic, historical feature and risk factors, such as age, sex, diabetes, hypertension (HTN), hyperlipidemia (HLP), renal failure, positive family history of CAD (FH, smoking, substance abuse, alcohol use in the past 24h, cocaine use in the past 48h were recorded. Non-diagnostic ECG included these categories: normal, non specific, early repolarization, abnormal without signs of ischemia such as old bundle branch block, LVH , A final diagnosis of AMI was determined by CK – MB and Troponin I. **RESULTS:** 474 patients were enrolled, 150 had non-diagnostic ECGs. In this study HTN with p-value=0/012 (>0/05), HLP with p-value = 0/0001 (>0/001), FH with p-value=0/001(>0/01) were significantly more prevalent in those who ruled in for AMI.

CONCLUSION: In past studies, in patients with non-diagnostic ECG, only hypertension was significantly more prevalent in those who ruled in for AMI and cardiac risk factors had limited clinical value in diagnosing of AMI in ED patients. In this study HLP, HTN, and FH was significantly more prevalent in those who ruled in for AMI.

T94) Myopericarditis versus acute coronary syndrome in the emergency setting : Margarita Puiggali¹, Dolores Aranda¹, August Supervia¹, Carlos Clemente¹, Jose Luis Alvarez¹, Francisco Del Baño¹, Dolores Sanchez¹, Isabel Puente¹ : 1. IMAS, Barcelona, Spain.

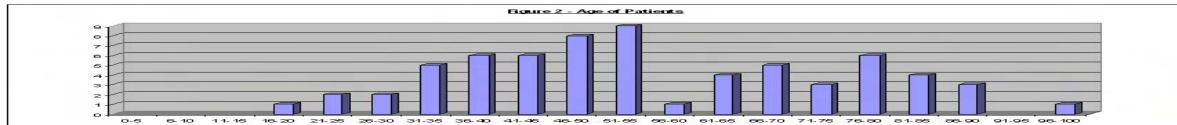
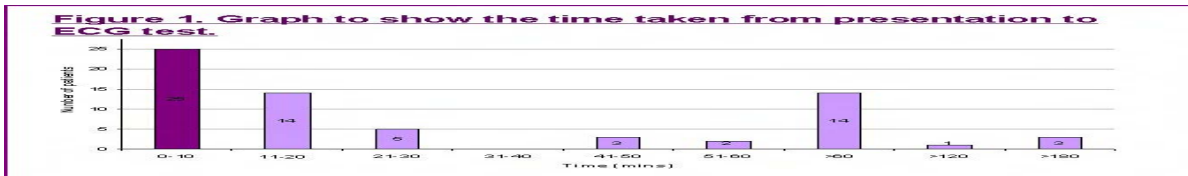
BACKGROUND: Myocarditis has different etiologies: drugs of abuse, hypersensitivity to drugs, infections, chemical agents. Coxsackie B virus is one of the most frequent cause. The incidence is three-fold higher in men. Although the disease has various clinical manifestations, symptoms suggestive of acute coronary syndrome (ACS) are found in some cases, which makes the diagnosis and initial treatment difficult. **CASE:** A 20-year-old man,

addicted to cannabis, no history of allergy or other disorders and no coronary risk factors, presented with chest pain that radiated to arms and dry cough of 6h duration. Physical examination: BP 144/89, HR 82, normal temperature. ECG:diffuse ST-segment elevation(1mm). Laboratory tests: creatine kinase(CK)400, M isoform CK 66, troponin T 0.36(VR<0.04), positive urine screen for cannabis. Pain disappeared with sublingual nitrate but diffuse repolarization abnormality persisted. Five hours later, chest pain reappeared, with ST increase>4 mm in the infero-lateral segment. The 2nd enzyme assay showed CK 894, CKM 89, troponin T 1.77. The ECG showed moderate hypokinesia in the inferior segment and ventricular dysfunction. Due to persistence of clinical symptoms, fibrinolytic treatment with tenecteplase was initiated. Pain subsided and ECG normalized. The ECG was normal after 48h. Coronariography performed at 72h was unrevealing (preserved ejection fraction). Laboratory tests of thyroid function, antinuclear antibodies, anti-cardiolipin antibodies, and serological investigations were negative or within normal ranges. The patient remained asymptomatic and was discharged 6 days after admission with the diagnosis of acute myopericarditis. DISCUSSION: Was the therapeutic attitude adequate? Given the absence of coronary risk factors and patient's age could a more conservative treatment be selected? Or taking into account the similarities with ACS and the consumption of cannabis, in which an association with ACS has been described was the treatment most adequate? When data reported are reviewed, an observation approach is recommended. Treatment is indicated in the presence of complications.

T95) Do adult patients presenting with chest pain to the Accident and Emergency Department receive an ECG within 10 minutes of presentation? : Mark Harrison¹, Elizabeth Denholm¹ : 1. Accident and Emergency, Newcastle General Hospital, Newcastle, United Kingdom.

INTRODUCTION: Chest pain is a common presentation to the emergency department. The annual average incidence in England is 616,000 patients, accounting for approximately 5% of all presentations. The College of Emergency Medicine guidelines state that 90% of adult patients should have an ECG performed within 10 minutes of presentation. A systematic review of acute chest pain found that the ECG was the most useful bedside test for detecting myocardial infarctions. It has been found that both short- and long-term prognosis are directly related to the admission ECG. METHODS: A retrospective audit was carried out on consecutive 100 adult patients presenting with chest pain. RESULTS: The patient set consisted of 40 males and 27 females. The ages ranged between 20 to 96 years, the mean age was 56 years. Of the cohort 37% (25) had an ECG within 10 minutes of presentation. The time taken for an ECG to be performed ranged between 1 to 206 minutes. The average time was 32 minutes. Of the 67 patients it was reported that 15 had acute ST changes or T wave inversion, suggestive of acute coronary syndrome. Of this group 53% had an ECG within 10 minutes of presentation. 68% of the patients were brought to the department by ambulance, 38% of whom had an ECG performed in the ambulance. Of these patients 58% subsequently received an ECG within 10 minutes of arriving in the department. CONCLUSIONS: Effective triage of patients presenting with chest pain to the Accident and Emergency department through history, examination and ECG could significantly decrease patient's morbidity and mortality as well as facilitating more efficient running of the department. Despite recommendations we are still not meeting National Emergency Care guidelines. Due

to the high incidence of chest pain and its potentially significant implications, more resources should be allocated to ensure a greater percentage of patients are treated in accordance with the guidelines.



T96) Volunteers Conference : Jalal T. Ashkar¹ : 1. Emergency Department, Hillel Yaffe M.C., Hadera, Israel, Israel.

The Hillel Yaffe Medical Center is situated at the western approach to the City of Hadera, half-way between Haifa and Tel Aviv. It serves a population of approximately 400,000 inhabitants - from Zichron Ya'akov in the north to Netanya in the south and from the sea coast on the west to Um el-Fahem and the "Green Line" in the east. The Medical Center treats a highly diversified population representing the varied social and cultural and ethnic groups who are resident in Israel. There has been a steady increase in the number of patients seen by our emergency department. In 2000, our doctors saw approximately 74,000 patients. In the past year alone, we admitted approximately 100,000 patients. The leading reasons for admission to the Emergency Department are a variety of traumas (22,200) and the full spectrum of internal diseases (33,600). In addition, our ED treats patients with orthopedic, surgical, gynecologic, urologic, ENT and ophthalmologic complaints. Because of our location adjacent to a number of major highways, a significant number (approx. 6,000) of the trauma patients were from road accidents. Our emergency department has also treated terror victims. An additional major focus of the emergency department is urgent treatment of cardiovascular disease, especially acute coronary syndromes and cerebrovascular accidents. Of course, the ED treats seasonal illnesses such as influenza, COPD, asthma and allergies. Our geographical location close to the coast and near agricultural areas, can explain the great number of patients suffering from near-drowning and also animal bites and insect stings who are seen by our emergency staff. There has been an increase in the numbers and variety of patients seen by our emergency department. This requires ongoing improvements in our professional abilities and of our medical devices in order to provide the highest level of medical care.

T97) Prescribing in the Elderly: The Role of the Emergency Medicine Practitioner. : Errol P. Visser¹ : 1.

Emergency Centre, Vergelegen Medi-Clinic, Somerset West, South Africa.

INTRODUCTION: Altered pharmacokinetics and pharmacodynamics are observed in the elderly. Physicians face the challenges of prescribing appropriately in order to achieve maximum therapeutic benefit. **METHODS:** Clinical prediction rules were developed in an attempt to optimise prescribing patterns to ensure safe, maximum patient benefits. **RESULTS:** In the sample reviewed, the percentage of cases which had potentially adverse drug combinations was significant.

The largest group involved patients on anticoagulants. Simvastatin and its derivatives can increase the anticoagulant effects of coumadin. Non-steroidal anti-inflammatory agents were the agents of choice in patients with musculoskeletal complaints. The efficacies of agents used to manage hypertension, angina, and cardiac failure are attenuated by the additions of NSAIDS. **CONCLUSION:** The Emergency Medicine Practitioners are encouraged to familiarise themselves with the altered pharmacodynamics and pharmacokinetics of the elderly in order for safe emergency medicine prescribing. Since the Emergency Centres see a random selection of the communities' elderly patients, the emergency medicine practitioners would theoretically be in an ideal position to address inappropriate prescribing practices through Clinical Governance bodies in the health communities.

Average age	76.1 years
Median age	75 years
Maximum age	95 years
Minimum age	65 years

T99) The Emergency Department and the Elderly: A Complex Encounter : Jalal T. Ashkar¹ : 1.
Emergency Department, Hillel Yaffe M.C., Hadera, Israel, Israel.

BACKGROUND: The Emergency Department of Hillel Yaffe Medical Center serves all kinds of patients, including the elderly. Approximately 70% of the patients after initial examination and treatment are released from the hospital. Most of the patients requiring attention and admission are aged 60 years and older. After age 70 various medical problems arise; especially cardiovascular, CNS disorders and trauma-related (repeated falls, etc.). In treating the geriatric patient the doctor-patient relationship is important. This is especially important for patients suffering from dementia, depression, confusion and with minimal knowledge of Hebrew. In these specific cases, the family doctor or geriatric physician should supply background details about the patient, for instance, regarding chronic medications and allergy. The large percentage of patients treated in our department are in constant need of care with complications like percutaneous gastrostomy, tracheostomy and pressure sores.

DISCUSSION: The process of caring for the elderly is a multidisciplinary medical and social effort that also includes the use of devices and preventive measures.

T100) Value of emergency ultrasound for early diagnosis of intra-abdominal bleeding in haemodynamically unstable patients : Ewa Raniszewska¹, Jacek Gwozdziejewicz², Jerzy Lasek², Jerzy Wegielnik¹, Andrzej Basinski¹, Katarzyna Gwozdziejewicz³ : 1. emergency medicine, medical university, Gdansk, Poland. 2. Trauma Surgery Dpt. Medical University, Gdansk, Poland. 3. Radiology Dpt. Medical University, Gdansk, Poland.

INTRODUCTION: Intra-abdominal bleeding is a common cause of death in multiple trauma patients in an emergency department. Computed tomography delivers precise evaluation of intra-abdominal injuries, however it is not advisable for hemodynamically unstable patients. A significant symptom of organ injuries is intraperitoneal free liquid, which can be detected with the use of the ultrasound technique (FAST). The alternative method for identifying intra-abdominal bleeding is Diagnostic Peritoneal Lavage (DPL). **Purpose:** Review the diagnostic methods used in the primary assessment of patients after severe abdominal trauma in order to recommend an algorithm to apply to the haemodynamically unstable patients. **METHODS:** Analysis of medical documents of adult patients with major abdominal injuries undergoing treatment in the Department of Emergency Medicine. **RESULTS:** The study included 155 patients with abdominal injuries, ISS estimated at 36.3 ± 16.1 . 47% of them developed hypovolemic shock, 35% underwent laparotomy. The sequence of diagnostic procedures was based on the algorithm used by the academic Trauma Team. In haemodynamically stable patients a complete imaging was performed. In unstable patients the diagnosis was based on the FAST and DPL results. **CONCLUSION:** In the primary survey of abdominal injuries, the ultrasound exam is an important tool of diagnostic significance, especially in the haemodynamically unstable patients, who require urgent laparotomy. Sonography avoids potential false-positive results from traumatic peritoneal taps. Intraperitoneal fluid is an indication for laparotomy however a negative ultrasound finding does not exclude the possibility of delayed internal bleeding. Currently, ultrasound has the advantage over diagnostic peritoneal lavage. Authors confirm that the secondary examination increases the sensitivity of the FAST.

T101) Traumatic Retinal Detachment Diagnosed with Ultrasound : Lee R. Peebles¹, Lisa Moreno-Walton¹, Lisa M. Mills¹ : 1. Emergency Medicine, Louisiana State University Health Sciences Center, New Orleans, LA, USA.

CASE: The patient is a 38 year old male without any significant past medical history who presented to the emergency department approximately 24 hours following an altercation in which he sustained a direct blow to the right eye with bare knuckles. He complained of instantaneous near total vision loss in the right eye following the punch, retaining the ability to only see shadows and faint outlines of objects. He had no complaints at the left eye. The patient was found to be in no distress with normal vital signs. Gross physical examination revealed only a few small abrasions to the face. There were no gross abnormalities to the external right eye. Computed tomography of the face and orbits was negative for acute fractures and extraocular eye movements were intact. Visual acuity was 20/800 and 20/20 in the right and left eyes respectively. Intraocular pressures were 12 and 14 in the right and left eyes respectively. Fundoscopic examination was normal on the left. However, the fundus was

not readily visualized on the right due to changes in the vitreous. Dilation of the pupil by ophthalmology did not improve visualization of the fundus. Ophthalmic ultrasound of the right eye using a high-frequency linear probe yielded adequate visualization of the posterior globe. (We will show both video and still US images demonstrating the retinal injury.)

DISCUSSION: In the setting of acute loss of vision, intraocular pathology should always be considered and prompt identification of retinal injury and subsequent evaluation and intervention by an ophthalmologist pursued. The emergency department is typically the initial point of presentation for injuries of this type; therefore, ED physicians must maintain a high level of suspicion to guarantee the best care for their patients. Ultrasonography continues to grow as a useful adjunct in the ED and, in the case of this patient, allowed the treatment team to make a relatively quick diagnosis.

T102) Is there Life after FAST? Emergency Department Ultrasound in Critically Ill Non-Trauma Patients : Sohom Maitra¹ : 1. Northern Deanery Specialist Registrar Emergency Medicine Training Programme, Newcastle-upon-Tyne, United Kingdom.

INTRODUCTION: Emergency Ultrasound (EM-US) is a common diagnostic intervention for the assessment of critically ill patients arriving in our Emergency Departments (EDs). History taking and clinical examination are mandatory in leading diagnostic yield. Beyond this, EM-US is the most versatile modality available to aid diagnosis. The goal-directed sonography is rapid, safe, painless and non-invasive. There is no patient exposure to contrast or radiation. The majority of ED evidence with EM-US has been with focused assessment with sonography for trauma (FAST). Consequently, the role of FAST is well recognised, with specificities nearing 100%. EM-US in non-trauma uses the same standard four views as FAST, but also uses focused cardiac, inferior vena cava and abdominal aorta views, into its algorithm. **METHODS:** A literature review was performed to appraise the evidence in three areas, where key or pathognomonic ultrasonographic findings are invaluable in making a diagnosis - abdominal aorta assessment, symptomatic hypotension ('shock') and focused echocardiography for cardiac assessment. **RESULTS:** EM-US in non-trauma, can accurately highlight the features of abdominal aortic aneurysm rupture, causes of cardiovascular collapse (eg pulmonary embolism, left ventricular failure, tamponade) and contract the differential diagnoses in an undifferentiated, critically ill patient. EM-US can make a quantitative assessment of 'volume state' via inferior vena cava collapse indices which can aid differentiation between the aetiologies of hypotension, most critically ill patients present with. **CONCLUSIONS:** Focused assessment with EM-US for free fluid, hypovolaemia, abdominal aortic diameter and cardiac function can be undertaken with high accuracy by ED physicians. Results provide early answers to time-critical diagnostic questions and help expedite management. Early diagnosis and goal-directed therapy in the ED, at the point of care, necessarily confers a survival benefit.



Inferior Vena Cava Diameter Measurement

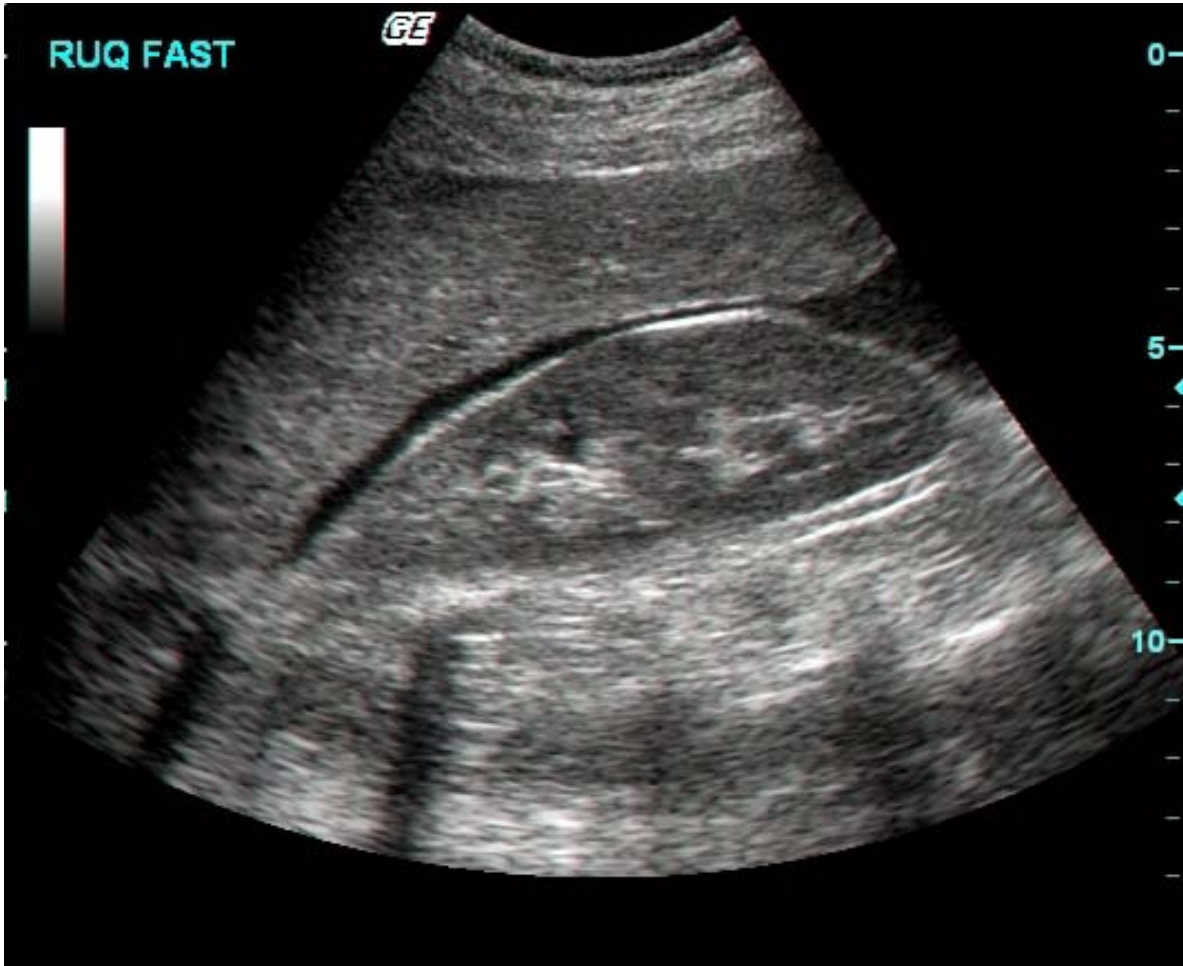
T103) Diagnostic-Therapeutic Impact of Echocardiography in Acute Dyspnea Management in the Emergency Department - EUHAD (Emergency Ultrasound of the Heart in Acute Dyspnea) : Gian A. Cibinel¹, Giulio Porrino¹, Marina Civita¹, Giulietta Griot¹, Giovanna Casoli¹, Alberto Goffi¹ : 1. ASL TO3 - SC Medicina e Chirurgia d'Urgenza, Pinerolo, Torino, Italy.

INTRODUCTION: Lung ultrasound has elevated accuracy in discriminating cardiogenic from non-cardiogenic causes of dyspnea, but it doesn't allow us to define the underlying cardiac pathophysiology, which often can only be presumed. **Objective:** To study the

feasibility and the diagnostic-therapeutic impact of echocardiography in patients with acute dyspnea in the ED. **METHODS:** Between January and June 2006 we prospectively enrolled 50 patients admitted to the ED of the Pinerolo General Hospital (Turin, Italy) with acute dyspnea (i.e. dyspnea appeared or worsened in the last 48 hours). In each patient we performed: physical examination, lung ultrasound, EKG, chest X-ray, and arterial blood gas analysis (ABG). On the basis of the results, the physician examining the patient was invited to define: (a) the main diagnosis (heart failure - HF, lung failure - LF, or mixed failure - MF), (b) the cardiac pathophysiology, and (c) the etiological diagnosis. Immediately after this first evaluation, echocardiography was performed in all patients. We then compared the diagnosis made before and after the performance of echocardiography, and we recorded the therapeutic changes that were introduced based on the ultrasonography findings. **RESULTS:** Echocardiography was feasible in all patients. Echocardiography results induced a change in the main diagnosis in 2 out of 50 patients (4%), and in cardiac pathophysiology in 19 out of 50 patients (38%). In addition, ultrasonography findings led to therapeutic changes in 8 patients. **CONCLUSION:** In patients with acute dyspnea in the setting of ED, the integration/implementation of clinical evaluation with lung ultrasound allows the correct definition of cardiac pathophysiology only in about 60% of patients. In our experience, echocardiography is feasible in all patients and has high diagnostic (40%) and therapeutic (15-20%) impact.

T104) When FAST is a FAFF: Is FAST Scanning Useful in Non-Trauma Patients? : Sohom Maitra¹, Robert D. Jarman², Neil W. Halford², Simon P. Richards³ : 1. Northern Deanery Specialist Registrar Training Programme, Newcastle-upon-Tyne, United Kingdom. 2. Department of Emergency Medicine, Queen Elizabeth Hospital, Gateshead, United Kingdom. 3. Department of Medical Ultrasound, University of Teeside, Teeside, United Kingdom.

INTRODUCTION: Focused Assessment with Sonography for Trauma (FAST) has evolved into a common point-of-care diagnostic intervention in UK Emergency Departments. Its role in the management of blunt abdominal trauma is well recognised. The aim of this literature review was to determine whether FAST can play a role in the management of non-trauma patients. **METHODS:** A literature review was performed with the emphasis on the use of FAST scanning in non-trauma. **RESULTS:** In the acutely ill, undifferentiated, septic or decompensated patient, a focused assessment for free fluid (FAFF) scan may be of benefit - as a goal-directed investigation, to search for free fluid as an indicator of underlying disease source. The presence of free fluid in the non traumatised peritoneum implies primary or secondary intra-abdominal pathology requiring urgent specialist review and management. A FAFF scan can also play a role in the management of patients with abdominal aortic aneurysm, ectopic pregnancy and some thoracic conditions. **CONCLUSIONS:** There is mounting evidence to support the efficacy of using such focused ultrasound, at an early stage, in critically ill patients. We advocate the use of the term FAFF and not FAST, when emergency ultrasound is applied to non-traumatic clinical cases. We advise its liberal use by accredited clinicians, as part of a structured approach to the assessment of the unwell, undifferentiated patient, presenting to emergency departments - especially those in shock or critically ill.



Free Fluid in Morrison's Pouch

**T105) Role of ED ultrasound in patient care, satisfaction, time and risk management in a DGH :
Muhammad A. Majeed¹, Ashes Mukherjee¹ : 1. Russells hall, Dudley, United Kingdom.**

INTRODUCTION: Purpose: To determine the extent to which emergency medicine physicians have participated in performing and interpreting ultrasonographic (US) studies in emergency departments (ED). **METHODS:** We collected the list of patients presenting with different problems where ED US helped in their early evaluation and management, over the last one year period. This list was collected from our Ultrasound machine. **RESULTS:** During this time we evaluated AAA, Cardiac, Retinal, Soft tissue lesions (bakers cyst, tendon ruptures) and free peritoneal fluid in Trauma, DVT, Pneumothorax and viability of pregnancy. **CONCLUSION:** It is clear that emergency screening ultrasound is now a nationally accepted tool for the rapid assessment of the emergency patient. The ability to perform these focused studies will allow for a more expedient and safer disposition of

patients. Length of stay in the emergency department dramatically decreases thus increasing patient satisfaction while maintaining an even higher standard of care. The elderly patient with the non-specific low back pain can be quickly screened by US and discharged without the risk of a missed AAA. Also, the awake young driver who presents following a RTC with transient hypotension can be quickly assessed and intraperitoneal bleeding rapidly identified. Pregnant females presenting with PV bleed and worried about the fetal viability or ectopic pregnancy can be quickly scanned and reassured or transferred to theatre. In these case examples, better quality of care has translated into improved patient satisfaction as well as better risk management. In these days of increasing litigation, it is important to both the individual physician and the hospital to ensure that each patient is evaluated as thoroughly and timely as possible thus guaranteeing the highest level of customer services. Our patients in the ED demand and deserve efficient, safe, and accurate health care. As we move into the new millennium, screening US will lead the way for new and more cost effective technology in emergency centers around the country.

T106) The Development of a Dedicated Pre Hospital and Retrieval Ultrasound Course for HEMS Retrieval Services : Fergal H. Cummins¹, Cliff Reid², Kavita Varshney³ : 1. Retrieval, CareFlight, Sydney, NSW, Australia. 2. ASNSW Aeromedical Retrieval , Sydney, NSW, Australia. 3. Westmead Hospital, Sydney, NSW, Australia.

INTRODUCTION: The aim of this paper is to describe the process involved in the development of an ultrasound course with a specific emphasis on the requirements of adult HEMS retrieval services in New South Wales. **METHODS:** An inclusive approach was utilised optimising the expertise of local retrieval services and international experts. Prior to the course a confidential questionnaire was circulated to retrieval physicians focusing on their expectations, needs and concerns for utilising ultrasound in the pre hospital and retrieval environments. A standard ultrasound course model was used as an initial template. This template was added to with a focus on the findings of the initial questionnaire, specific encountered clinical conditions, dedicated portable equipment, the pre hospital and inter hospital environments and retrieval personnel.

The format of the course included didactic teaching, small group learning and hands-on learning components. Course assessment and critique are further described. **Discussion:** Ultrasonography is an established diagnostic adjunct for critical care clinicians. Its use in the pre hospital and retrieval settings has previously been described. There are particular issues concerning ultrasonography in these environments which must be addressed during any dedicated HEMS pre hospital and retrieval ultrasound course. **CONCLUSION:** The focused approach employed in the development of this course addressed specific needs and utilised the local experience of experts in the fields of HEMS pre hospital retrieval and ultrasonography. This approach may assist in the development of other such courses.

T107) The role of permanent access at ultrasound in choosing the best therapy in trauma patients with suspected spleen injuries : Adela Golea¹, Radu Badea¹, Raed Arafat¹ : 1. Emergency Medicine , University of Medicine and Pharmacy, Cluj Napoca, Romania.

INTRODUCTION: The standard in emergency medicine is to identify the most seriously ill patients first and to assure that they receive rapid care. Ultrasound of trauma patients must answer specific questions: Is there haemoperitoneum, haemopericardium, or haemothorax? Is it necessary to perform an immediate laparotomy?

PURPOSE: To specify the role of continuous ultrasonography in diagnosis and choosing the proper therapy in trauma patients. **METHODS and MATERIALS:** The study included patients admitted to the Emergency Department with recent history of trauma (147 traffic accidents, 12 household accidents) and selected patients with abdominal bruising and a clinical picture suggesting internal bleeding (52 patients: 39 men, 13 women). Emergency and dynamic ultrasonography was performed with sectorial 3-5MHz array, using a 3 step protocol: FAST, inferior cava vein (IVC) aspects and serial abdominal evaluation.

RESULTS: The emergency ultrasound examination classified the suspected patients into 3 groups: A. 18 patients with ultrasonographic signs of spleen tear and haemoperitoneum who needed immediate surgical therapy. B. 15 patients with minor/moderate splenic injuries in whom it was initially decided on conservative therapy and dynamic ultrasound evaluation. C. 19 patients without ultrasound evidence of spleen injuries, 3 with small free fluid collections in the Pouch of Douglas. These patients were evaluated clinically and ultrasonographically over 24 hours. Dynamic ultrasound IVC aspects showed hypovolemic status in 27 patients, 9 of them with ultrasound diagnosis of haemoperitoneum. **CONCLUSIONS:** 1. In the Emergency Department, ultrasonography is the first tool for diagnosing splenic injuries. Abdominal ultrasound exam and IVC evaluation can better predict the diagnosis of hemorrhagic shock in cases of uncertain clinical picture of trauma patients. 2. Permanent access at ultrasound examination creates the possibility of choosing conservative therapy (65,3% initially, 50% finally) in case of patients with minor/medium (100% initially, 76,6% finally) spleen injuries. 3. Dynamic ultrasonography reduced the number of diagnostic laparoscopic surgeries.

T108) SUCCESSFUL MANAGEMENT OF CLINICALLY UNSTABLE ACUTE PULMONARY EMBOLISM WITHOUT SHOCK USING TRANSTHORACIC ECHOCARDIOGRAPHY IN THE RESUSCITATION ROOM: THROMBOLYSIS OR NOT? : Paul Gayol¹, E. Bayle¹, F. Khalil¹, T. Kirchgessner¹, H. Hssain¹, J. Kopferschmitt¹ : 1. Emergency Department, Strasbourg University Hospital (NHC), Strasbourg, France.

CASE: A 39-year-old woman was admitted in the ED for discomfort, dizziness and loss of consciousness. Examination before admission: tachycardia (150 bpm) and thoracic-pelvic pain. On presentation: dyspnoea, tachypnoea (RR 25 cycles/min), with hypoxia, BP 113/64 mmHg, HR 140 bpm. The CV/lung examination: Normal. She had neither pain nor signs of deep vein thrombosis. Blood tests: Troponin I 0.30 µg/l (myocardial injury) but BNP marker normal (37 ng/l). AB gas (without O₂): pH 7.4, PCO₂ 25.5 mmHg, PO₂ 53.6 mmHg; D-dimer 8860 µg/l. ECG: sinus tachycardia, strain pattern S₁, Q₃, T₃, incomplete RBBB, negative T-wave V₁-V₂-V₃ and ST segment depression (0.1 mV) V₅-V₆. A chest X-ray: normal. TTE performed in the resuscitation room (RR) revealed significant evidence of severe acute right ventricular (RV) dysfunction with pressure overload criteria. Immediate treatment with thrombolysis was instituted: Ten mg IV bolus + 80 mg of rt-PA (Actilyse®) over 2 hours, and heparin infusion.

Significant improvement in the patient’s clinical condition was observed shortly (< one hour) after the beginning of thrombolysis. Dyspnoea and tachypnoea disappeared, with a dramatic reduction of high-flow oxygen, and HR dropped to 100bpm. During treatment, lower-extremity DUS was also performed: recent left DV thrombosis. Helical CT (after thrombolysis): filling defects in both peripheral pulmonary arteries branches consistent with recent bilateral PE. DISCUSSION: Intermediate non-high-risk acute pulmonary embolism (normal blood pressure but RV dysfunction on echocardiography and elevated BNP or troponin) is the most controversial group of cardiovascular patients at the moment. In fact, the use of thrombolysis in this condition remains unclear. Current data of some prospective trials do not confirm that it decreases mortality in those patients but cannot exclude a clinically significant benefit. Conclusion: We report successful use of the controversial thrombolysis in the management of a normotensive patient with APE-induced RV dysfunction and present beneficial clinical evidence.

T109) FAST SCAN IN THE DIAGNOSIS OF ACUTE DIAPHRAGMATIC RUPTURE : Deepak Doshi¹, Rip Gangahar² : 1. Emergency Medicine, South Manchester University Hospital, Manchester, United Kingdom. 2. Rochdale Infirmary, Rochdale, United Kingdom.

BACKGROUND: In the UK, 17,000 deaths each year are a direct result of injuries. Annually, injuries lead to 720,000 hospital admissions and 6 million visits to emergency departments. Approximately 5% of all injuries are associated with a rupture of the diaphragm. 80-90% of diaphragmatic ruptures occur on the left side and more than 80% are the result of motor vehicle accident. Clinical diagnosis is often difficult due to associated injuries and vague symptomatology. Sensitivity of chest x-ray in the diagnosis of diaphragmatic rupture varies from 50-65% without a naso-gastric tube. Negative FAST scan for free fluid may avert the decision for computerized tomography of abdomen. FAST scan is a highly specific technique that can be used by emergency physicians in the diagnosis of diaphragmatic rupture in blunt abdominal trauma. CASE and DISCUSSION: A new ultrasonographic sign for the diagnosis of acute diaphragmatic rupture- "Rip's absent organ sign" - is introduced for the first time by the authors.

Sonographic features of a ruptured diaphragm

Rip’s absent organ sign - non visualization of spleen or heart	
Poor movement of diaphragm	
Elevated diaphragm	
Liver-sliding sign (absence of liver sliding)	
Pleural effusion	
Sub-phrenic effusion	
No free fluid in abdomen	
Spleen visualised in thorax	



Chest x Ray ? Haemothorax

T110) A new method to score the quality of USCOM scans : Giles N. Cattermole¹, Mia Leung², Paulina Mak¹, Colin A. Graham¹, Timothy H. Rainer¹, Chi On Tang, Brendan E. Smith : 1. Accident and Emergency Medicine Academic Unit, Chinese University of Hong Kong, Shatin, Hong Kong SAR, China. 2. University of Melbourne, Melbourne, VIC, Australia.

INTRODUCTION: The Ultrasound Cardiac Output Monitor (USCOM) provides a non-invasive Doppler ultrasound measure of stroke volume, cardiac output and other cardiovascular parameters. There is no universally agreed method of scoring the quality of traces obtained with the device. **Objectives:** To describe a new method of scoring USCOM traces (Table 1), and relate this to operators' learning curves and to the precision of measured stroke volume. **METHODS:** Design: Prospective observational comparative study; part of the

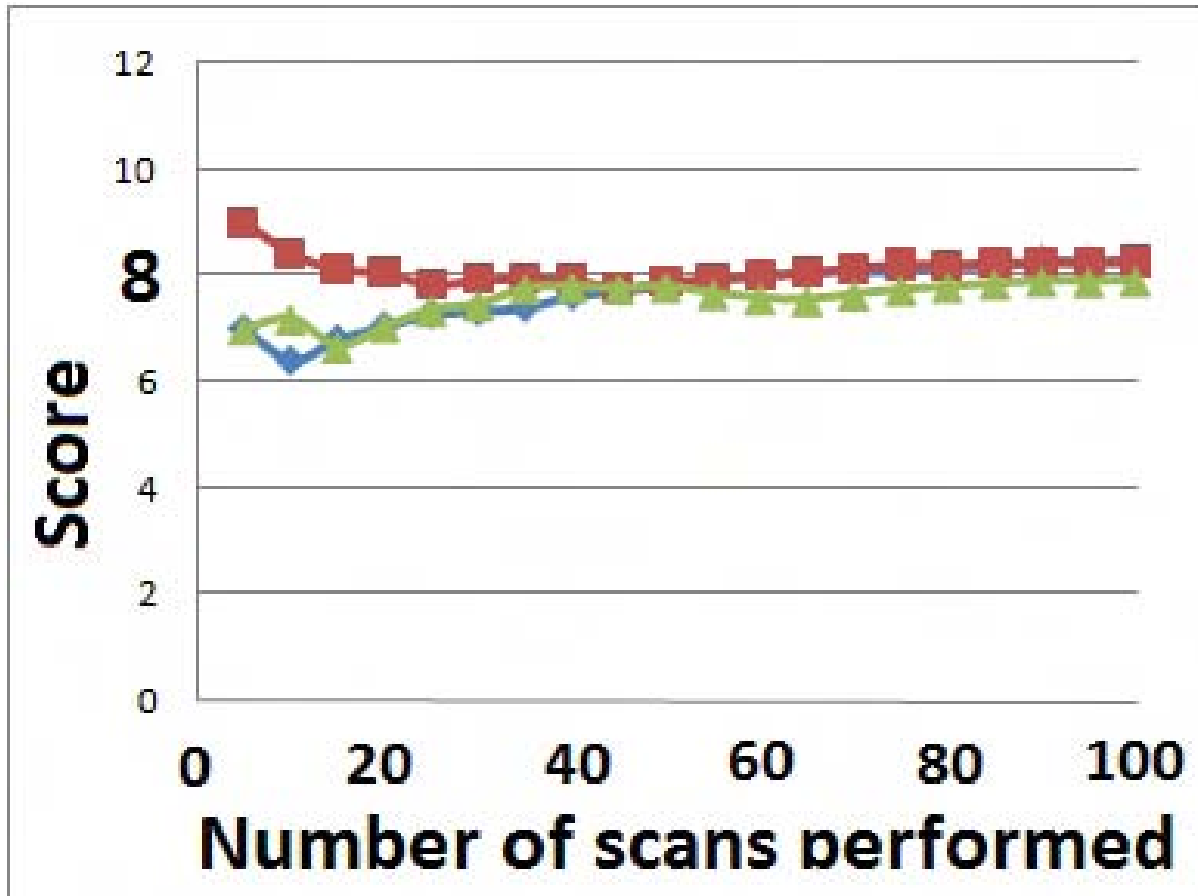
“Healthy Children’s Vital Signs and USCOM Values” study for which ethical approval was obtained from the Chinese University of Hong Kong. Setting: Primary schools and kindergartens in Hong Kong. Participants: 654 children aged 4-12 (54% male) in Hong Kong schools. Three USCOM operators (one physician, one nurse, one medical student), who had been taught USCOM by a local expert and company representative, performed the scans. Interventions: USCOM was performed twice on all subjects by two independent, blinded operators. Each USCOM scan was later scored by a single observer. Outcome measures: Cumulative average scores. Number of unsupervised scans required to reach cumulative average score. Bland Altman plots for interobserver precision of stroke volume measurement. RESULTS: (Figure 1): 30-40 unsupervised scans were required for operators to reach their cumulative average scan quality. Of scans considered acceptable quality (score of 8/12 or above), Bland Altman limits of agreement were -17.3% to 20.7%. CONCLUSION: Using the proposed scoring system, new USCOM operators will require 30-40 scans for proficiency. A cut-off score of 8/12 is proposed as a definition of an acceptable scan.

Scoring USCOM

Criterion	2 points	1 point	0 point
upstroke	Well-defined on all three peaks	Slightly blurry in one or more peaks	Very blurry in one or more peaks
Downstroke	Well-defined on all three peaks	Slightly blurry in one or more peaks	Very blurry in one or more peaks
Apex	Well-defined on all three peaks	Slightly blurry in one or more peaks	Very blurry in one or more peaks
Area	Entire area is shaded blue	Area is mostly blue with some specks of white	Pale blue with white area
Aortic valve opening	-	Aortic valve opening click present in any	Not present
Aortic valve closing	-	Aortic valve closing click present in any cycle	Not present
E or A wave	-	E or A wave present in any cycle	Not present
Baseline	-	Trace returns to baseline during diastole in any cycle	Trace does not return to baseline during diastole in any cycle

Use three consecutive cycles. Each cycle contains a peak corresponding to systole, and a baseline with or without E and A waves, corresponding to diastole.

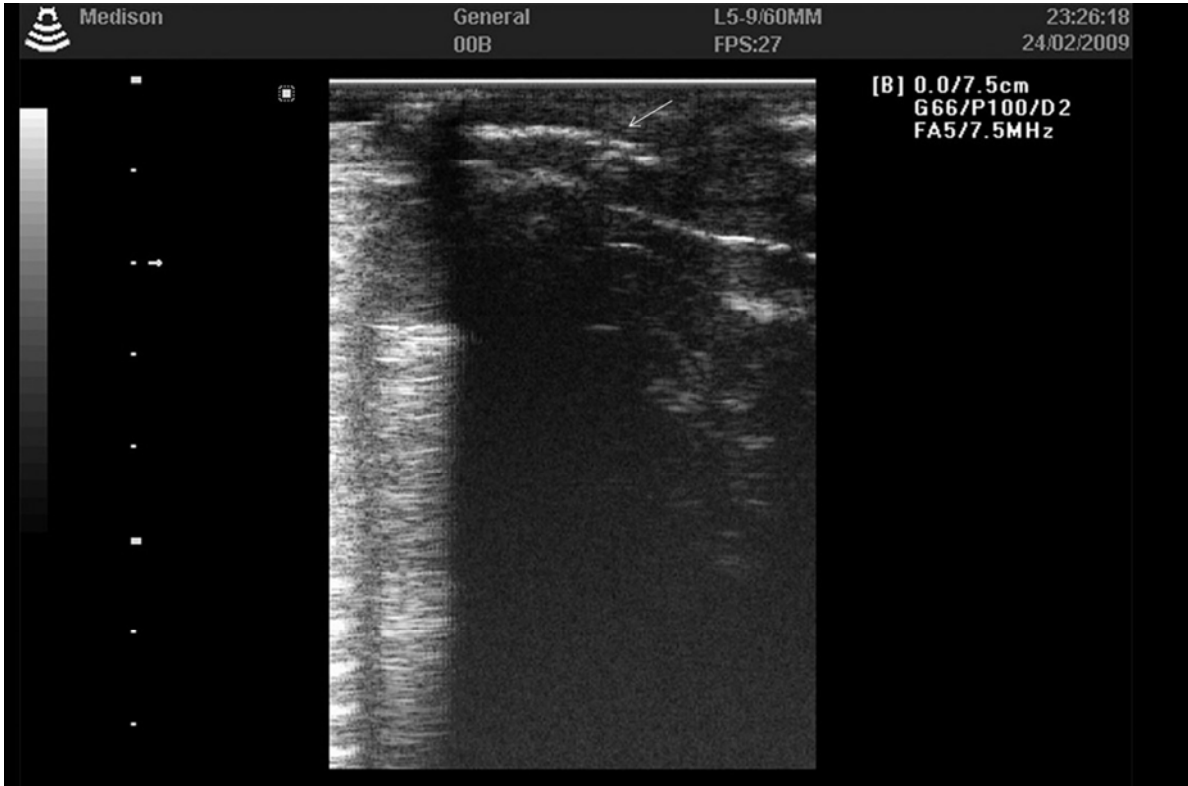
The maximum score is 12. An acceptable trace scores at least 8.



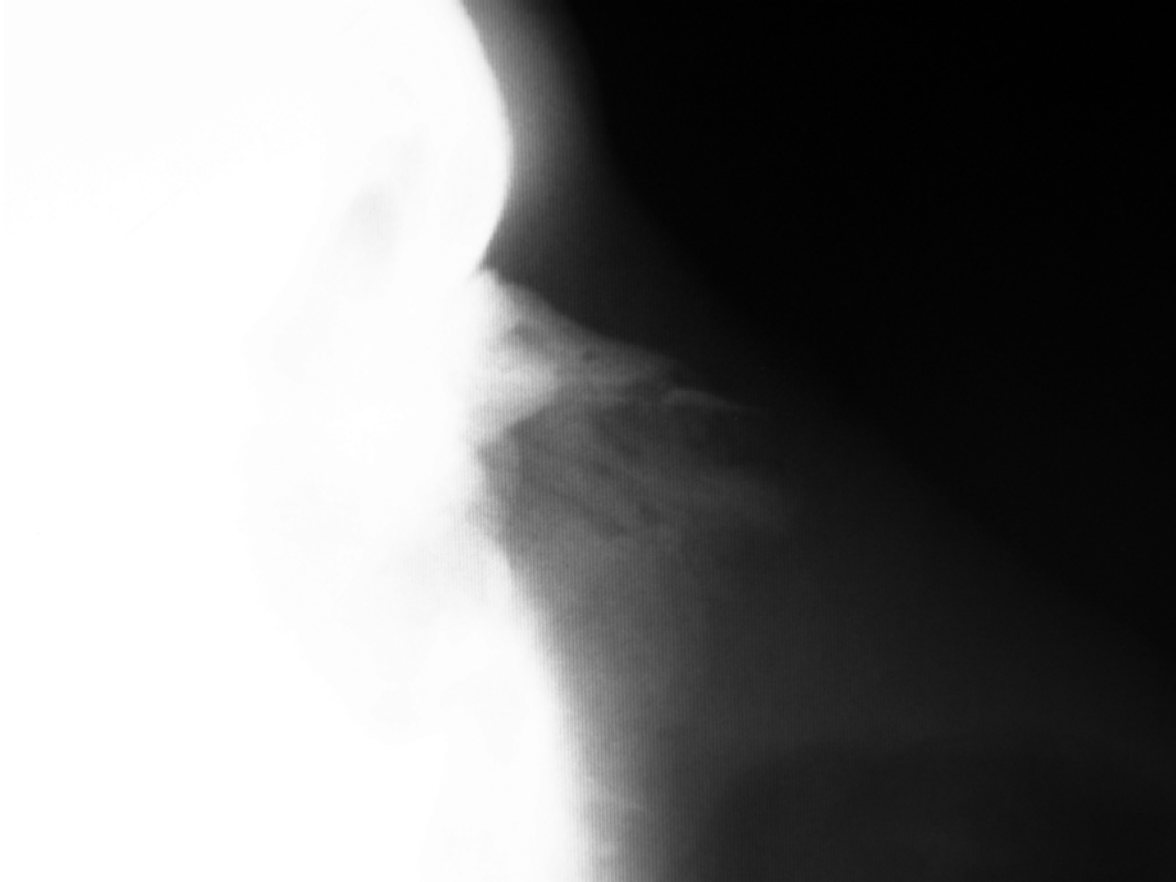
T111) Nasal Bone Fracture Detected by Bedside Emergency Department Ultrasonography : Secgin Soyuncu¹, Firat Bektas¹, Ozgur Karadeniz¹ : 1. Emergency Department, Akdeniz University, Antalya, Turkey.

CASE: A 20-year-old man presented to the emergency department with nasal fracture after a personal assault. The nasal bone appeared as a hyperechogenic structure on ultrasonographic examination and the irregularity and displacement on the bone was recognized.

DISCUSSION: The evaluation of nasal bone fractures by ultrasonography is a proposed method involving no radiation exposure, rapid topographic evaluation and ease of bedside performance. Especially, in patient with suspected nasal fracture based on physical examination, emergency department ultrasonography can be used to confirm the diagnosis.



Ultrasound image of the nose (2) in a patient with a nasal fracture.



Lateral view of the nose in a patient with a nasal fracture.

T112) Traumatic pancreatic rupture diagnosed by ultrasound : Mingtse Tsai¹, Wanching Lien² : 1. Far East Memorial Hospital, Taipei, Taiwan. 2. National Taiwan University Hospital, Taipei, Taiwan.

BACKGROUND: Traumatic pancreatic rupture is associated with high morbidity and mortality. The diagnosis is difficult and usually accompanied with other injuries. **CASE:** We report a 17- year-old boy who suffered from this disease alone. The diagnosis was first suspected in sonography and then confirmed by computed tomography. Endoscopic retrograde pancreatography showed his pancreatic duct was patent. He made an uneventful recovery after 10-day hospitalization. **DISCUSSION:** Sonography is well-known to detect the presence of hemoperitoneum in blunt abdominal trauma. The high specificity and positive predictive value make it a good “rule in”’s tool for blunt abdominal traumatic patients. Furthermore, it can be applied to the assessment of patients with posttraumatic abdominal pain. It provides a real-time, noninvasive, and inexpensive means of screening this kind of patients.



Abdominal sonography showed a fluid accumulation around the pancreas.



Abdominal computed tomography showed partial pancreatic body tear and fluid collection around the pancreas.

T113) The Digital Portfolio: A Longitudinal Medical Student Ultrasound Education Experience : Erika Kube¹, Daralee Hughes¹, Brad Gable¹, Francis E. Madore¹, Ashish Gupta¹, David Bahner¹ : 1. The Ohio State University Medical Center, Columbus, OH, USA.

INTRODUCTION: Ultrasonography (US) is taught in residency programs, yet at the medical student level is still developing. As clinical skills simulation centers expand, US equipment

miniaturizes, and more students are exposed to ultrasound; documenting the educational and hands-on experience can be put in a digital form. This exposure to US may become portable and a digital portfolio comprised of US images and videos may be useful in demonstrating experience and possibly competency. **METHODS:** Medical students from all 4 years (Med 1-4) participated in grade specific US curricula consisting of didactics and hands on training. During two full academic years from July 1, 2006 to June 30, 2008, images and videos completed by students in a Skills and Education Center were saved and copied to a centralized computer server. Total videos and images were compiled, evaluated and catalogued. **RESULTS:** A total of 10,085 images and 1,227 videos were saved during the two year period by 378 medical students. For the academic year 2006-2007 medical students were responsible for 3,641 of the images (84.8%) and 270 of the videos (86.0%). First year medical students obtained 778 images and 20 videos, second year medical students 1174 images and 64 videos, third year medical students 211 images and 20 videos, and fourth year medical students 1,478 images and 166 videos. For the academic year 2007-2008 medical students obtained 4,316 images (74.5%) and 617 videos (67.6%). First year medical students were responsible for 600 images and 107 videos, second year students 555 images and 81 videos, third year students 132 images and 14 videos, and fourth year students 3,029 images and 415 videos. **CONCLUSIONS:** The medical student ultrasound digital portfolio allows students to collate and document their ultrasound experience. Currently there is no formal requirement for ultrasound training, documentation of competency or the minimum numbers of US exams for each level of medical student education. Ultrasound digital portfolios may be a useful tool in documenting the educational hierarchy of ultrasound proficiency.

Table 1 2006-2007

Medical Student Year	Number of Medical Students	Still Images	Video Clips
Med 1	48	778	20
Med 2	68	1174	64
Med 3	20	211	20
Med 4	23	1478	166

Table 2 2007-2008

Medical Student Year	Number of Medical Students	Still Images	Video Clips
Med 1	62	600	107
Med 2	45	555	81
Med 3	28	132	14
Med 4	84	3029	415

T114) Point-of-care ultrasound to evaluate neck swelling, neither fluid or tissue but air detection: A case report : Paolo Pasquero¹, Erika Dellavalle¹, Lorenzo Borio¹, Massimo Porta¹ : 1. Internal Medicine, S. Giovanni Battista Hospital, Torino, Italy.

BACKGROUND: The direct identification of the nature of a neck swelling can be essential in the critical setting but may be complicated because of the complexity of underlying different anatomical structures. The basic ultrasound signs, such as parenchyma, anechoic, or gas pattern can be used to distinguish tissue, liquid or air and assist in diagnosis. We describe a case to emphasize the utility of fundamental ultrasound signs to recognize the nature of a neck enlargement in sudden circumstances. **CASE:** A 65 year old, Caucasian man presented with neck swelling. No other masses or lymphadenopathy could be felt in the neck. The medical history of this patient included a tracheostomy followed by decannulation with tracheoplasty, 3 weeks before, because of intra-cerebral haematoma, diabetes mellitus and mild hypertension. No modification of vital sign were observed. Where the anterior cervical mass was found, a point-of-care ultrasound scan identified only the presence of air without surrounding subcutaneous emphysema. Therefore diffuse horizontal lines arising from swelling subcutaneous layers were detected by means of a linear probe. No other fluid or tissue ultrasound signs, in spite of objective examination findings, were detected so we could rule out cyst, bleeding, abscess or thyroid mass and lymphadenopathy. Complete decompression of the neck swelling was temporally obtained using a fine needle aspiration until the next breaths. After surgical exploration, a tracheal fistula was found with a valve mechanism, that needed anterior tracheal wall reinforcement with a new tracheoplasty. The tracheal fistula, a late complication of tracheotomy closure, healed after 15 days. **DISCUSSION:** In this case report the Point-of-care ultrasound was able to suggest the final diagnosis by detecting diffuse horizontal lines typical of well located air bubble and to exclude bleeding, cysts or others pathological masses.





T115) Ultrasound by Emergency Physicians: A Model for Gaining Hospital Approval : Santiago Domenech de F¹, Jorge Luis Cuevas González¹, José Rodríguez Santos¹, Jesús Aguilar-Escalera¹, Maria Jesus Gonzalez Hernandez¹, Miguel Mariné-Blanco¹ : 1. Hospital La Moraleja, Madrid, Spain.

BACKGROUND: We provide an example of a proposal used successfully to gain hospital approval for Emergency Department (ED) use of screening ultrasound by emergency physicians. Ultrasound (US) has long been recognized as a powerful tool for use in the diagnosis and evaluation of many clinical entities. Starting a program in ED requires successfully navigating three areas of concern: cultural, technological, and political. In this poster we provide an example of a proposal used successfully to gain hospital approval for ED use of screening ultrasound by emergency physicians. A screening ultrasound is, as the name implies, not a complete formal study. Types Of Screening Ultrasounds:
Abdominal Ultrasound for cholelithiasis - It is important to note the purpose of this screening

exam is only to detect stones. Abdominal Aortic Aneurysm - US can only accurately evaluate for dilatation not rupture. Renal Colic - Although renal calculi themselves are rarely seen on US, hydronephrosis is easily demonstrated. Pelvic Ultrasound - ED screening US is limited only to identifying a definite in utero pregnancy. Cardiac Ultrasound - Screening cardiac ultrasound evaluation is limited to the detection of cardiac activity. Focused Abdominal Sonography For Trauma - The FAST exam's only objective is the detection of free intraperitoneal fluid in blunt abdominal trauma. Training: There is, at this time, no set national standard training in Spain. In our hospital, didactic training in studies has varied from 20-25 hours of didactics including technical training followed by 25-50 proctored exams per primary indication. DISCUSSION: The ability to perform these focused studies will allow for a more expedient and safer disposition of patients. Length of stay in the emergency department dramatically decreases thus increasing patient satisfaction while maintaining an even higher standard of care.

Screening Ultrasound in our Emergency Department

TYPE	OBJETIVE	FOLLOWED BY
Abdominal US	Gallstones present	Formal complete radiographic study in the next 1-2 days
Abdominal US	Hydronephrosis	Formal complete radiographic study in the next 1-2 days
Pelvic US	Intrauterine pregnancy	Formal complete radiographic study in the next 1-2 days
Skin US	Foreign body presence	Formal complete radiographic study in the next 1-2 days
Limbs US	Difficult central line placement	During the act
Joints US	Localization joint effusions	Formal complete radiographic study in the next 1-2 days
Cardiac US	Pericardial effusion	Sent immediatly to the operating room
Abdominal US	Abdominal aortic aneurysm	Sent immediatly to the operating room
Abdominal US	Free peritoneal fluid	Sent immediatly to the operating room

Hospital La Moraleja Madrid



Didactic session

T116) The Influence of Head Rotation on the Anatomical Relationship of the Right Internal Jugular Vein and the Carotid Artery : Soon Im Kim¹ : 1. Anesthesiology and Pain Medicine, Soonchunhyang University Hospital, Seoul, Korea, South.

INTRODUCTION: Inadvertent puncture of the carotid artery (CA) is the most frequent complication of internal jugular vein (IJV) catheterization. Most landmark-guided methods dictate that the head should be turned away from the side of the neck being entered, but head rotation does affect the position of the IJV relative to the CA. The IJV usually lies anterior and lateral to the CA. As the head is rotated away from midline, the IJV becomes more directly anterior to the CA. Extreme head rotation, frequently causes the CA to sit directly underneath the IJV, increasing the theoretical risk of CA puncture. The purpose of this study was to evaluate the effect of head rotation on the anatomical relationship of the right internal jugular vein (RIJV) and the carotid artery (CA) with using an ultrasound images in Korean patients. **METHODS:** We investigated 117 patients (age range: 16-87 years old) who were placed in the supine position, but not in the Trendelenburg position. An ultrasound probe was

placed on the right neck at the apex of the triangle formed by the head of the sternocleidomastoid muscle and the clavicle, and it was directed toward the ipsilateral nipple at a 30 degree angle to the coronal plane. For each head rotation (0, 30, 60 degree), we measured the horizontal diameter of the RIJV and CA, and the percentage of overlap of the CA and the RIJV with using an ultrasound system. **RESULTS:** The mean RIJV diameter was 18.4 ± 4.3 mm and the mean CA diameter was 7.5 ± 1.2 mm at the neutral head position. Following head rotation, the percentage overlap of the CA and RIJV increased significantly (Table 1, $P < 0.05$). The percentage overlap of the CA and RIJV in the neutral head position increased more in the patients with a BMI over 25. **CONCLUSIONS:** Head rotation toward the contralateral side increases the percentage of overlap of the CA and RIJV. To decrease the risk of CA puncture, rotate the head from the neutral position as little as possible when performing RIJV catheterization.

Table 1. Percentage Overlap of the Carotid Artery and the Right Internal Jugular Vein at Three Different Degree of the Head Rotation

Head rotation	Percentage overlap
0°	32.7 ± 27
30°	$45.4 \pm 31^*$
60°	$57.0 \pm 32^{*\dagger}$

Values are mean \pm SD. *: P value < 0.05 vs 0°, †: P value < 0.05 vs 30°

T117) Accuracy of chest Sonography in ICU patients: comparison with X-ray and CT-scan : Marco Tengattini¹, Federico Prato¹, Gian Luca Vignazia¹, Pier Neri¹, Francesco Della Corte¹ : 1. Università del Piemonte Orientale, Novara, Italy.

INTRODUCTION: Beside chest radiography is routinely used to assess the respiratory condition of critical patients with acute respiratory distress syndrome (ARDS) or acute lung injure (ALI), the gold standard is considered CT scan. The aim of this study is to compare the diagnostic accuracy of bedside chest radiography with lung ultrasonography (US) and thoracic computed tomography. **METHODS:** In this prospective study pleural effusion, alveolar consolidation, pneumothorax and alveolar–interstitial syndrome were evaluated. In the alveolar consolidation also the presence of air in the lower airways was considered. US were performed by two different operators, and the bedside chest X-ray was carried out by an independent operator. **RESULTS:** 36 patients were enrolled in the study. Chest radiography had an area under curve (AUC) of 0,722 for pleural effusion, 0,537 for pneumothorax, 0,741 for alveolar consolidation, and 0,923 for alveolar–interstitial syndrome.

Lung ultrasonography had a AUC of 1 (C.I. 0.879-1) for pleural effusion in both operators, 1 (C.I. 0,879-1) or 0,958 (C.I. 0,811-0,994) in pneumothorax in the first and second operator, 0,796 (C.I. 0,606-0,922) or 0,741 (C.I. 0,545-0,884) for alveolar consolidation, and 0,700 (C.I. 0,502-0,854) or 0,553 (C.I. 0,358-0,736) for alveolar–interstitial syndrome. Lung ultrasonography, in contrast to chest radiography, could quantify the extent of lung injury. Interobserver agreement for the ultrasound findings was confirmed by Pearson correlation:

0.98. CONCLUSIONS: Lung ultrasonography is more accurate than bedside chest radiography; can help the clinician make a rapid diagnosis and an exact monitoring in the evolution of the pathologies; particularly in cases of pleural effusion, pneumothorax, or alveolar consolidation.

T118) Doppler ultrasonography in acute claudication : Cristiano Bortoluzzi², Giacomo Strapazzon¹, Pietro Albenzio², Francesco Rocchetto², Filippo Griselli³, Roberto Parisi² : 1. Department of Clinical and Experimental Medicine, University of Padova, Padova, Italy. 2. OC SS Giovanni e Paolo, Venezia, Italy. 3. Ospedale dell'Angelo, Mestre, Italy.

BACKGROUND: Echo-Doppler ultrasound (US) examination represents the first line diagnostic device in differential diagnosis of acute claudication. A Baker's or popliteal cyst often represents an asymptomatic incidentaloma in US examination of lower extremities. Severe lower limb ischemia caused by a Baker's cyst is a rare condition. **CASE:** A 58-yr-old man, with a history of a sedentary life style but no cardiovascular diseases, was first referred to our vascular service for intermittent claudication of sudden onset and rapid progression. The maximum walking distance was approximately 200 meters. His physical examination revealed diminished left posterior tibial and dorsalis pedis pulses. He underwent a diagnostic work-up to exclude a deep vein thrombosis or a thrombosed aneurysm, dissection, embolism, entrapment syndrome, or intra/extra cystic disease of the popliteal artery. US examination disclosed a hypoechoic multilobulated cystic lesion with disappearance of the good triphasic flow of the left popliteal artery for a short tract and no atherosclerotic lesions. Patient was then referred to contrast enhanced magnetic resonance angiography (CE-MRA), which showed no evidence of peripheral or central enhancement of the T1-hypointense cystic mass, and to both contrast enhanced computed tomography angiography (CE-CTA) and catheter angiography, which showed an extrinsic compression of the left popliteal artery. The findings favoured the diagnosis of a Baker's cyst, so he underwent surgical operation. The popliteal cyst was resected and the diagnosis confirmed at histopathological examination. The patient had an uneventful postoperative course and, at follow-up, he was asymptomatic with unremarkable US examination. **DISCUSSION:** Acute claudication represents a common clinical problem at US examination but popliteal cystic adventitial disease and Baker's cyst, which are included on the differential diagnosis list for claudication in subjects without risk factors, are rarely symptomatic. Here we describe clinical pictures of US examination, CE-MRA, CE-CTA and catheter angiography and their role in guiding diagnosis and treatment.

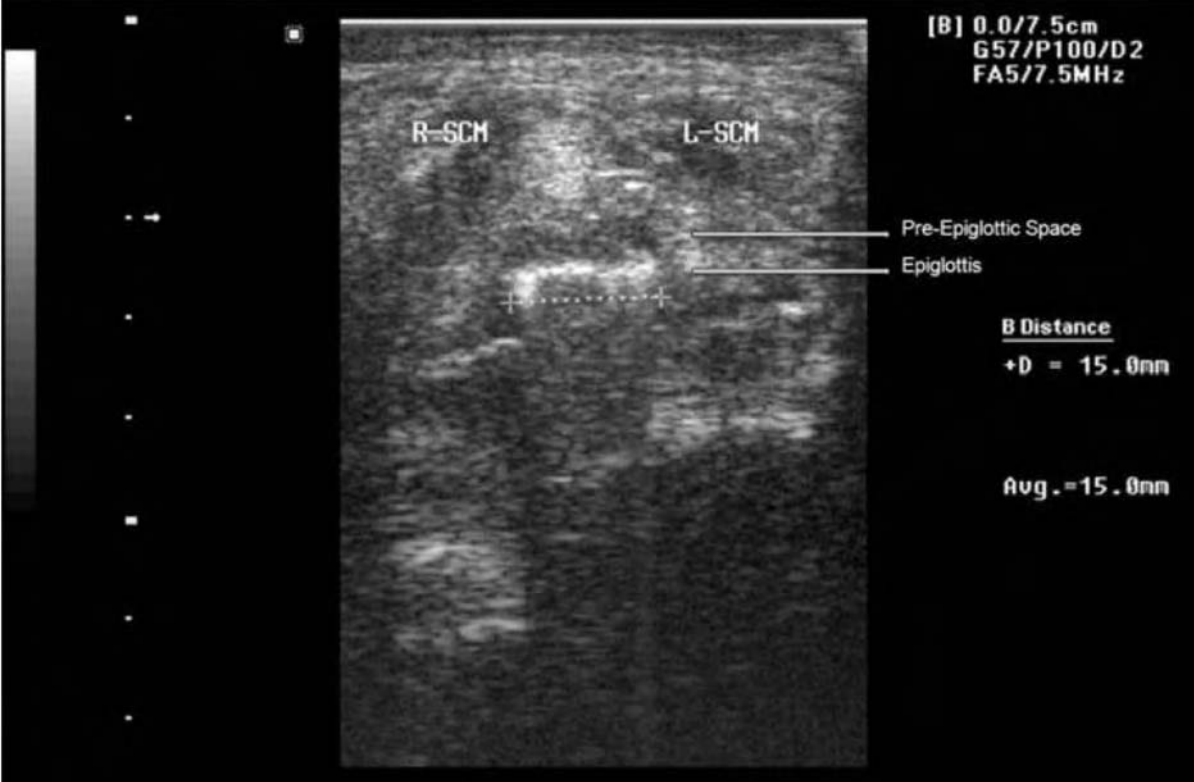
T119) Utility of hand held portable ultrasound in rural Guatemala : Frank Madore¹, Erika Kube¹, David Bahner¹ : 1. Erika Kube, The Ohio State University Medical Center, Columbus, OH, USA.

INTRODUCTION: Physician-performed bedside ultrasound has proven to be a valuable diagnostic tool in the Emergency Department and in other clinical settings in the United States and abroad. Recent studies have suggested a role for portable ultrasound in austere environments and in developing countries where other testing may be limited. The goal of this project was to define possible roles for hand held bedside ultrasound in a rural hospital. **METHODS:** A SonoSite iLook 15 (Sonosite, Inc.) with a 5-2 MHz curved array transducer

was used in a public hospital in Guatemala in April 2009. All scans were performed by a fourth year medical student with three years of ultrasound experience. Patients were chosen by convenience sample according to perceived utility of an ultrasound study. RESULTS: A total of 36 scans were performed on 20 patients during a three week period: 9 FAST, 4 renal, 3 cardiac, 3 hepatobiliary, 3 appendix, 2 lung, 2 bladder, 2 aorta, 1 each OB (transabdominal), gynecological (transabdominal), IJ (procedural), IVC, DVT, ocular, spleen, and bowel. The iLook 15 was particularly useful for basic, gross scans such as the FAST scan (identifying intraabdominal free fluid), urinary imaging (identifying hydronephrosis or bladder enlargement), cardiac imaging (evaluating cardiac motion, pericardial effusion, and contractility), and simple measurements such as abdominal aorta, IVC, and kidney. However, the machine had a number of limitations: a single probe, lack of M-mode capability, lack of ability to save video, lack of pictographs or easy text labeling, lack of removable or easily-accessed memory, short battery life, and relatively low image resolution. CONCLUSIONS: A basic hand held portable ultrasound machine can be a valuable tool in making critical bedside diagnoses in a developing country. Additional features that would greatly increase the scope of scans that could be completed with a hand-held machine include a greater variety of transducers, better screen resolution, having M-mode capability, and a longer battery life.

T120) Sonographic Diagnosis of Epiglottal Enlargement : Firat Bektas¹, Secgin Soyuncu¹, Ozlem Yigit¹, Havva Neslihan Korkmaz¹, Murat Turhan² : 1. akdeniz university, Antalya, Turkey. 2. Akdeniz University Head and Neck Surgery, Antalya, Turkey.

CASE: A 56 year-old man presented to the emergency department (ED) with a history of fever, sore throat and gradually increased hoarseness initiated two days ago. He had been following up since March 2007 with nasopharyngeal cancer. Physical examination was normal except high body temperature, a swelling on the anterior neck, pharyngeal erythema and epiglottal edema on the indirect laryngoscopy. Ultrasonography (US) was performed at the bedside revealing a hypoechoic structure with an increased thickness echogenic epiglottal and pre-epiglottal space. DISCUSSION: ED US could be a valuable tool to detect pathological enlargement of the epiglottis. US may be useful in unstable patients for diagnosing epiglottitis because it is cheap, rapid, noninvasive, and does not aggravate patient's symptoms.

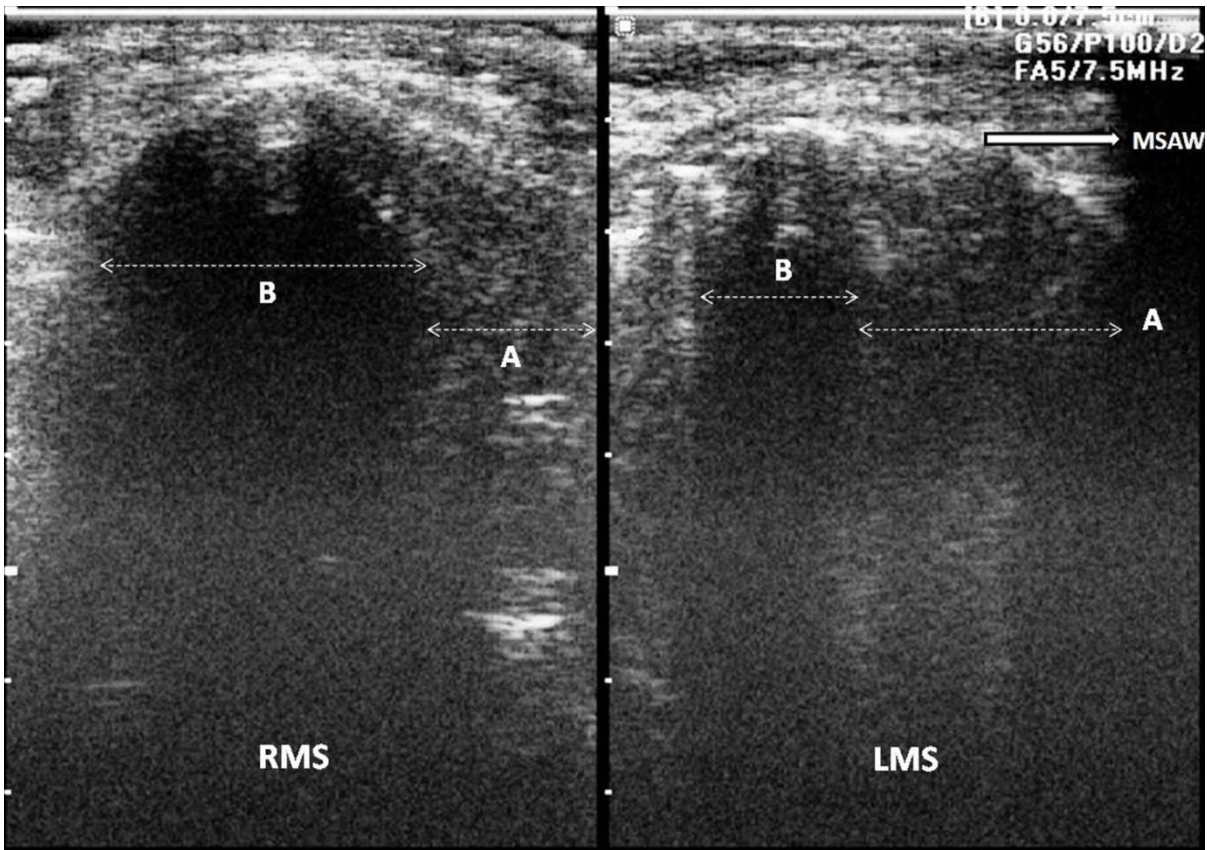


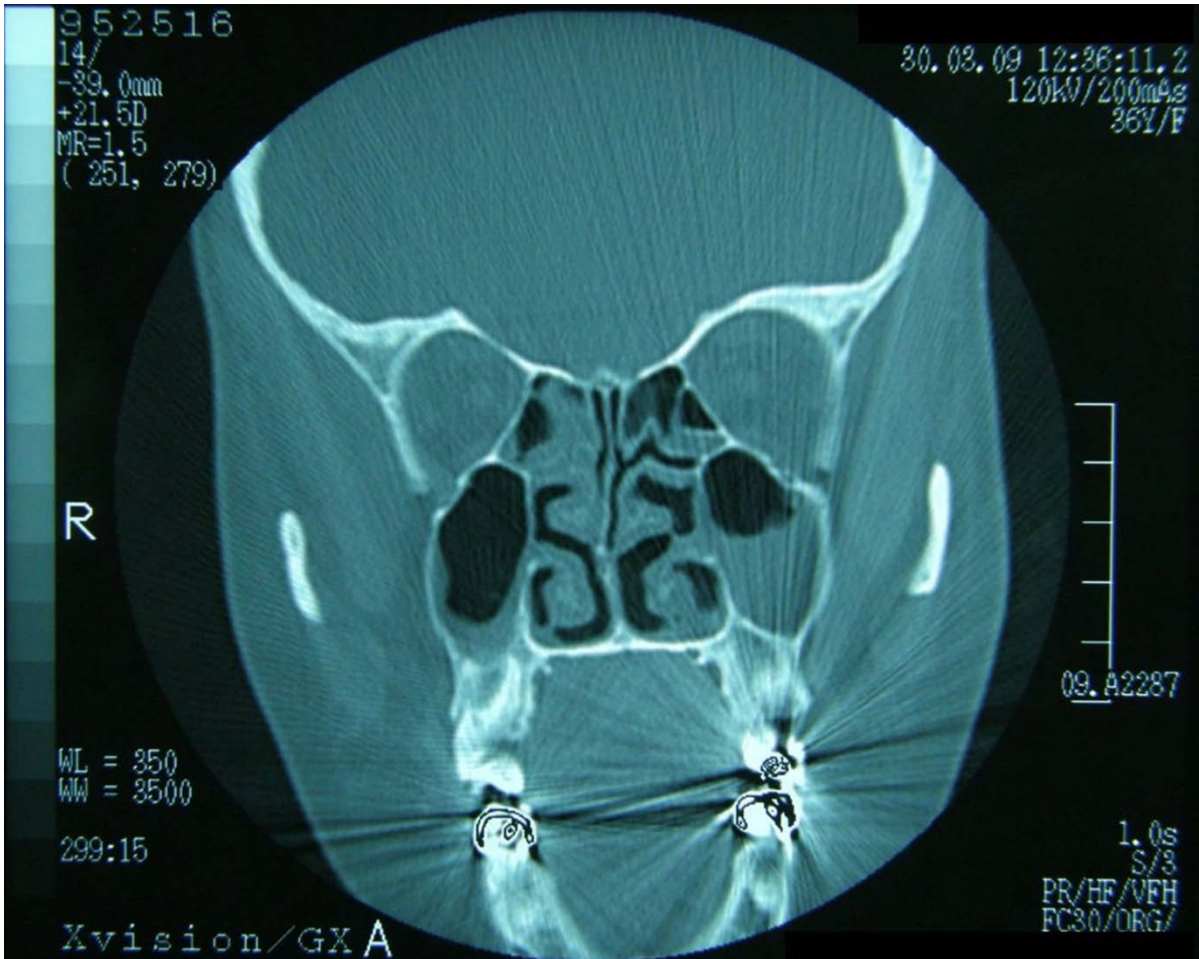


T121) Sonographic Diagnosis of the Maxillary Sinusitis in Emergency Department : Firat Bektaş¹, Secgin Soyuncu¹, Ilker Gunduz¹, Ozlem Yigit¹ : 1. emergency medicine, akdeniz university, Antalya, Turkey.

CASE: A 32 year-old woman presented to the emergency department (ED) with a history of fever, sore throat and nasal obstruction initiated five days ago. The vital signs of the patient were as follows: blood pressure was 137/74 mmHg, pulse rate 112 beats/min, respiratory rate 22/min, oral body temperature 38.6oC, and oxygen saturation was 96% with pulse oximeter on room air. Physical examination was normal except pharyngeal erythema. These findings led us to think that the patient had an acute sinusitis or acute pharyngitis. We have vacillated whether antibiotic therapy was necessary for the patient or not. Because acute sinusitis may often be caused by bacterial infection, patients with symptoms compatible with this syndrome frequently received antibiotics; however viral pharyngitis also proceeds with the same symptomatology and does not necessitate antibiotic use. In order to make the diagnosis definite, we decided to perform an ultrasound (US) examination. Bedside US examination was performed according to the method described by Revonta. The examination was

performed while the patient was in a sitting position. Patient's head was in slight flexion so that an imaginary line from the auditory canal to the lower margin of the orbit was horizontal. Increase in mucosal thickening and decrease in air, in both of the maxillary sinuses were shown with bedside US, by using a 10 MHz linear probe (Medison Digital Sonoace 5500. Medison America, Inc. Cypress, CA 90630) (Figure 1). The certain diagnosis was confirmed by paranasal sinus tomography (Figure 2). She was discharged from ED with antibiotics, oral paracetamol tablets and nasal decongestant. She was fully recovered ten days later.





T122) The role of ultrasound in family medicine residency training : Jacob Bryan¹, Lindsey Bostelman¹, David Way¹, Erika Kube¹, David Bahner¹ : 1. Erika Kube, The Ohio State University Medical Center, Columbus, OH, USA.

INTRODUCTION: Ultrasound use has become common in many clinical settings and although it has many potential uses for primary care practitioners, there is some controversy over whether ultrasound should be taught in American family medicine residency programs. Our objective was to determine which ultrasound procedures were being taught in family medicine residencies and to elicit the opinions of program educators regarding ultrasound training and barriers to training. METHODS: A digital survey was created using Zoomerang online software. E-mail with a link to the survey was sent to family medicine residency programs to be completed by faculty involved in resident education. RESULTS: There was a response rate of 47.8%. The most common ultrasound procedure taught was basic prenatal ultrasound where 33% of responders listed this as a required procedure, and 53% listed it as

an optional procedure. 86% of responders felt that performing basic obstetric ultrasound was within the scope of training. 27% of responders stated that their program did not have any family medicine faculty involved in training residents to perform basic prenatal ultrasound, compared to 56% who had at least 2 faculty. Programs were three times more likely to teach central line placement, paracentesis, and thoracentesis without the aid of ultrasound. Only 2% of programs reported using ultrasound to aid with incision and drainage of an abscess, while 38% felt that these procedures were within the scope of family medicine training. The most common barriers to teaching ultrasound were inadequate knowledge and experience of preceptors and inadequate institutional support and credentialing tools.

CONCLUSIONS: The use of obstetric ultrasound in family medicine training programs is common; however, ultrasound is not frequently used for other purposes. Despite the benefits of using ultrasound to guide various procedures, most programs do not use ultrasound for this purpose. This survey was developed to assess the current state of family medicine training in ultrasound and future studies are needed to determine the best methods for implementing an ultrasound training curricula.

T123) Diagnostic Accuracy of Chest Ultrasound Versus B-type Natriuretic Peptide in the Diagnosis of Cardiogenic Dyspnea in the Emergency Department: a Prospective Study : Remo Melchio¹, Emanuele Bernardi¹, Luca Dutto¹, Antonello Iacobucci¹, Marco Ricca¹, Elena Migliore¹, Bruno Tartaglino¹ : 1. EMERGENCY DEPARTMENT, A.O. S.CROCE E CARLE, CUNEO (ITALY), Busca, 0, Italy.

INTRODUCTION: Aim: To compare the diagnostic accuracy of Chest Ultrasound (CU) and Brain Natriuretic Peptide (BNP) in the diagnosis of heart failure in patients presenting with acute dyspnea at the Emergency Department. **METHODS:** From September 2008 to January 2009 we studied prospectively 63 patients (mean age 79,5+8,9 ys; M=34, 54%) who presented to the ED with rest dyspnea as a chief complaint. Exclusion criteria were: age<30ys, chest trauma, end stage renal failure, shock, pneumothorax, CU not feasible. Patients underwent CU with a 3.5 MHz convex probe and BNP levels were determined by Fluorescence Immunoassay (Biosite ©). The comet score, equal to the sum of all the comet tail artefacts recorded, was calculated. Moreover CU was considered positive in the presence of bilateral alveolar interstitial syndrome. Definitive diagnosis of cardiogenic dyspnea was attributed by two independent emergency physicians blinded to the CU and BNP results, after chart review. Diagnostic accuracy of two methods was evaluated by ROC curve analysis and compared by the Hanley and McNeil method. **RESULTS:** The final diagnosis was heart failure in 24 pts (39%). Diagnostic accuracy measured as ROC curve AUC was significantly better for comet score (AUC=0.94, 95% CI 0.78-0.98) as compared to BNP (AUC=0.76 95% CI 0.62-0.86), p=0.01. Sensitivity and specificity, positive and negative predictive values and LR+ and LR- of CU and BNP (cut-off of 100 ng/ml) in the studied population are reported in the Table. **CONCLUSIONS:** In this study, CU shows a better diagnostic accuracy compared to BNP in the diagnosis of heart failure for the patients presentig with acute dyspnea in the ED and confirms the increasing interest in the role of CU in the diagnosis of acute respiratory failure in the Emergency Department.

TABLE						
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	Sens	Spec	PPV	PPN	LR+	LR-
CU	0.80	0.97	0.95	0.88	30	0.21
BNP	0.98	0.40	0.51	0.98	1.65	0

T124) Emergency Bedside Ultrasound in Mumbai, India : David T. Williams¹, Louis Hirsh¹, Erin Wilkes¹, Thomas M. Mailhot¹, Diku P. Mandavia¹, Williams K. Mallon¹ : 1. Emergency Medicine, Keck School of Medicine of The University of Southern California, Los Angeles, CA, USA.

INTRODUCTION: Domestically, emergency bedside ultrasound (U/S) continues to play a primary role in the management of both medical and trauma patients. The goal of this study was to assess physician and physician-trainee interest and utility of an introductory lecture and workshop on emergency medicine (EM) bedside U/S in Mumbai, India. **METHODS:** An optional, anonymous survey was conducted on a convenience sample of physicians, fellows, residents, and medical students after a 1 hr EM bedside U/S lecture and small group hands-on workshop at SGS Medical College and KEM Hospital. The condensed lecture format covered physics, FAST exams, pneumothorax, abdominal free fluid, echo, aorta, renal, gall bladder and obstetric U/S exams. Workshops included hands-on training and reviewed U/S procedural assistance, ocular, and DVT exams. **RESULTS:** Of 280 conference participants, 80 (29%) were surveyed and 69 (86%) were collected. Only 10% of subjects currently used emergency bedside U/S in their clinical practices. 87% of subjects rated the training as extremely (42%) to very (45%) helpful, 10% as moderately helpful and less than 3% rated the course as somewhat, slightly, or not at all helpful. Half (49%) of the subjects envisioned themselves using all of the U/S indications presented. Overall FAST (91%), abdominal free fluid (88%), echo (86%), pneumothorax (85%), ocular (73%), obstetric (68%), DVT (65%) and procedural assistance (65%) were of the greatest interest to those surveyed. Nearly all (99%) of the surveyed participants desired further U/S training, and 100% of interested subjects thought that more than a one day course would be required. Opinion of optimal course length varied from 2-7 days (47%), 2-4 weeks (40%) and greater than 1 month (12%). Emergency bedside U/S barriers to clinical practice were most commonly cited as lack of training (57%), financial (52%), and radiology departmental resistance (2%). No participants reported hospital politics as a barrier. **CONCLUSIONS:** This survey reveals that EM bedside U/S is a readily exportable curriculum component with high utility and substantial international physician and trainee interest in Mumbai, India.



Small group, hands-on clinical workshops and teaching held at SGS Medical College and KEM Hospital in Mumbai, India.

T125) Rectal foreign body: does it relate to self-injurious behavior? A case report : Ozge Duman Atilla¹, Deniz Oray¹, Ridvan Atilla², Yalcin Golcuk¹ : 1. Tepecik TRH, Izmir, Turkey. 2. Dokuz Eylul UH Dept. Emerg Med, Izmir, Turkey.

BACKGROUND: Rectal foreign body is a clinical situation which is of different reasons in its underlying etiology. Self injury attempts have been reported in the literature for the etiology of rectal foreign bodies. **CASE:** A 31-year-old male patient was admitted to the emergency department, with the complaint of a foreign object that had been placed for sexual gratification into the rectum by himself but he refused any further medical procedure. Two days after his first admission, he was seen again in the ED. His complaints were abdominal pain and unable to pass gas and feces and failed attempts to remove the foreign body by himself. The foreign body was seen in the pelvic area on radiological views. The foreign body was removed during an open abdominal surgery under general anesthesia. Nine days after the first admission, he presented to the ED again, and declared that he had removed his surgical

sutures by himself. Examination of the abdomen had revealed that not only the superficial skin sutures but also some part of the deep tissue sutures had been removed and small intestine could be felt through the open part of the incision. He was hospitalized and operated for wound closure. **DISCUSSION:** The subtle psychiatric illness is difficult to diagnose in the emergency department unless the primary presenting complaint is related to the underlying disorder. As he was admitted to the hospital three times during the last nine days and all his admissions were of intentional purposes, we think the patient was not only presenting clinical complaints but also self injury attempts. Hence it was thought that his presentations might be a part of a self injury behavior disorder.

T126) Acute painful paraplegia: beware of aortic dissection! : Judith Jaspers¹, M. S. van Zagten¹, C. P. de Jager¹, J. H. Duppen¹, M. H. Leuken¹ : 1. Jeroen Bosch Ziekenhuis, Den Bosch, Netherlands.

BACKGROUND: Non-traumatic acute paraplegia is associated with vascular problems. Differential diagnoses one should consider include thrombosis or embolism of the anterior spinal artery, epidural/subdural hemorrhage, hematomyelia due to vascular malformations, discusembolism, vascular compression by spinal cord tumors and aortic media dissection. Subacute causes are spondylolisthesis, postinfectious transverse myelitis and an epidural abscess. **CASE:** A 68 year old female, with a history of hypertension and myocardial infarction, presented to the emergency department with acute excruciating lower back pain, lower extremity paralysis and urinary incontinence. On admission her vital parameters were normal. Neurological examination revealed a strength 3/5 for the lower limbs, sensory disturbance down to the waist and areflexia of the lower extremities. The MRI of the thoracic and lumbar spinal cord appeared normal. The patient was admitted to the ward with the diagnosis of myelo-infarction. Upon admission the pain intensified, femoral pulses were absent and the patients feet had turned cool and white. CT imaging showed an infra-renal aortic dissection with complete aorta obstruction. **DISCUSSION:** Painful paraplegia is uncommon and exists in only 2-3% of acute aorta dissection. Spinal cord ischaemia is more common with distal aortic dissections. Transient or permanent neurological symptoms at onset of aortic dissection are not infrequent, 17-40%, but often dramatic and may mask the underlying condition. The reliability and rapid availability of computed tomographic scanning makes it the screening test of choice in the emergency setting. In the emergency department, immediate priority in the treatment of aortic dissection is the control of arterial blood pressure with the goal of a systolic pressure between 100-110 mmHg and pulse of 60-70 beats/minute. Immediate surgical and radiological consultation is warranted. In conclusion, aortic dissection is an uncommon cause of non-traumatic acute painful paraplegia. Thorough examination and imaging is essential. Delay in diagnosis can be life-threatening.

T127) Common Psychiatric Presentations to the Emergency Department of a Tertiary Care Hospital in Karachi, Pakistan : Muhammad Shahid¹, Haider Naqvi¹, Kamran Hameed¹, Abdul Samad¹ : 1. Emergency Medicine, Aga Khan University Hospital, Karachi, Sindh, Pakistan.

INTRODUCTION: Objective: The objective of the study was to see the characteristics of the psychiatric patients admitted through the Emergency Department of a tertiary care hospital.

METHODS: Retrospective chart review was performed on patients admitted in Psychiatry ward through the Emergency Department at Aga Khan University Hospital Karachi during two years period (2006 and 2007). **RESULTS:** Three hundred and eighty seven patients were admitted during this time period; out of which 203 were females. Patients were mostly educated, unemployed and residents of Karachi. Many patients had 'Depression' as a final diagnosis when they were discharged from the Psychiatry service. Physical examination was not documented in the notes of most of the patients; however, mini mental examination was done in the Emergency Department. Complete blood count was the most common investigation which was sent from the Emergency Department. **CONCLUSION:** As depression is very common among patients admitted through the Emergency Department, therefore, Emergency Physicians should be aware of the signs and symptoms of this disorder. It is also emphasized that physical examination of Psychiatry patients should be documented in the Emergency Department notes.

T128) Improvement of Decerebrate Status in a Hanged Child Following Emergent Tracheostomy : Hassan Soleimanpour¹, Farzin Khoshnudi¹, Mohammad hassan Sharifi movaghar¹, Behrad Ziapour¹ : 1. Tabriz University of Medical Science of Iran, Tabriz, Iran.

INTRODUCTION: Trauma is the most common cause of decerebrate rigidity. Decerebrate status is a situation arising from inferior brain stem damaging conditions. Following painful stimulus the arms extend abnormally and become adducted. The wrist and fingers are flexed, and the entire arm is internally rotated at the shoulder, the neck undergoes abnormal extension, the teeth may become clenched, the leg is internally rotated and extended, and the feet and toes are plantar flexed. **CASE:** The case presented, is an eleven year-old boy brought by EMS into the ED with decerebrate status due to hanging during swinging. Heart rate was 132 and Blood pressure was 120/80 Respiratory rate was 35. First pulse oximetry read 55%. Concerned about suspected laryngeal injury due to hanging, performing orotracheal intubation in the case of hanging was contraindicated and to ensure a proper reliable airway and appropriate oxygenation and ventilation we applied Bag Mask Ventilation as a temporary means until the emergent tracheostomy was set in continue. Before tracheostomy, ABG revealed any hypercarbia though hypoxia was obvious. During the few minutes after tracheostomy, the patient was sent to obtain brain and laryngeal CT-scans. Though, any evidences implying brain edema or laryngeal injury was not seen. THE patient was put under mechanical ventilation and decerebrate status was surprisingly resolved completely during one hour. Post tracheostomy studies, revealed no positive pathologic finding. These studies included; cervical vertebral X-ray, CT-scan studies of brain, larynx and neck, bronchoscopy, biochemistry routine laboratory test. **DISCUSSION:** We believe that reversible cerebral status has been due to brain stem decreased function without any previous or permanent pathologic neurological disorder. There are limited reports that have explained decerebrate status improvement among children.

T129) Characteristics of Deliberate Self Harm in Emergency Departments: a Case Control Study from Pakistan : Muhammad Shahid¹, Adnan Hyder¹, Junaid Razzak¹, Murad Khan¹ : 1. Emergency Medicine, Aga Khan University Hospital, Karachi, Sindh, Pakistan.

INTRODUCTION: In Pakistan, it is estimated that there are between 30,000 and 60,000 Deliberate Self Harm (DSH) events annually and there is some evidence that suicidal behavior is on the increase in Pakistan. The role of an Emergency Department (ED) as the first point of contact for patients with DSH has been recognized. The objective of the proposed research is to study the characteristics and outcomes in patients presenting to the ED of four tertiary care hospitals of Karachi with DSH. **METHODS:** This will be a multi-center case-control study conducted over a period of 3 months. All patients above 18 years of age, both males and females, presenting with a history of DSH, to ED of two major Government hospitals and two private sector hospitals of Karachi will be asked to participate in the study. Those who do not give consent or deny “intentional” self harm will obviously be excluded from the study. However, refusal and non-participation rates will be recorded. The study will recruit the next patient, matched by gender and age (to within +/- 10 years) visiting the ED, in the same shift for any condition other than DSH as a study-control. Three Research Assistant (RA), who are medical graduates, will be posted in the ED at each hospital for the duration of three months. Each will cover morning, evening and night shifts alternating fortnightly. RA’s will sit at triage or the front desk and enroll patients on indication by the ED shift-supervisors. Different methods of self harm will be studied systematically in the proposed research. If patients have used drugs to harm themselves then the type, route and quantity of drugs would be noted in addition to the reason for drug ingestion, past psychiatric history, previous attempts of DSH and management done in the ED. Questionnaire is modified from SUPRE-MISS.

T130) A Rare Cause Of Ophthalmoplegia In The Emergency Room: Fisher’s One-And-One-Half Syndrome : Ali O. Yildirim¹, Yusuf Emrah Eyi¹, Orhan Cinar¹, Bilgin Comert¹ : 1. Dept.of Emergency Medicine, Gulhane Military Medical Academy, Ankara, Turkey.

BACKGROUND: Fisher’s one-and-one-half syndrome is one of the rare causes of ophthalmoplegia. We aimed to share our experience about an old patient who acquired the syndrome secondarily to ischemia. **CASE:** A 79 year old man presented to the emergency department with the complaints of vertigo, double vision, and nausea/vomiting. He has had hypertension for 10 years, diabetes mellitus for 15 years, ischemic heart diseases for 15 years, and had been on medications for these conditions. His vital signs were as follows: BP:180/100 mmHg; HR:80 beats/min Temp.: 36.2C RR:15breaths/min. SaO2: 94%. On arrival in the emergency department, the man was alert, oriented, and appropriate. Romberg sign was positive and he had positional vertigo. Field of vision and fundus examination was normal. The right eye was plegic on the centre, and left eye viewing laterally, had horizontal nystagmus. Since a CNS lesion was suspected, CT scan of the cranium was ordered; which was normal. MR imaging showed an infarct field on the right of medial line in the pons region. The patient was admitted to the neurology clinic with the diagnosis of one-and-one-half syndrome. **DISCUSSION:** Fisher’s one-and-one-half syndrome occurs in the involvement of paramedian pontine reticular formation together with medial longitudinal fasciculus in pons. Vertical eye movements are saved, but the eye on the same side as the lesion is plegic horizontally, contralateral eye has an impaired medial movement because of the internuclear ophthalmoplegia, and the eye is laterally deviated. It is essential to know the

typical findings of this syndrome in order to diagnose at the emergency department.

T131) REMOTE CEREBELLAR HEMORRHAGE AFTER THE SURGICAL OBLITERATION OF A SPINAL DURAL ARTERIOVENOUS FISTULA : Murat Eroglu¹, Duzgun Yildirim² : 1. emergency department, Maresal Cakmak Military Hospital, Erzurum, Turkey. 2. Kasimpasa Military Hospital, Istanbul, Turkey.

BACKGROUND: Hemorrhage around the operative site is common following neurosurgical procedures. Hemorrhage at remote sites such as epi- or subdural and subarachnoid spaces is also not uncommon. But cerebellar hemorrhage after supratentorial neurosurgical operations is a rare, self-limiting phenomenon. Although, lots of cases have been reported in the neurosurgical literature, to the best of our knowledge, remote cerebellar hemorrhage after spinal arteriovenous fistula (DAVF) operation has not been described in the imaging literature. **CASE:** We present a case of a 46-year-old woman with dorsolumbar non-radicular pain whom had a type I spinal DAVF underwent neurosurgical operation under general anesthesia. She was discharged from the intensive care unit with no early postoperative complication. A few days later, she had a severe headache, visual disturbance and confusion. A control cranial MRI examination had been done with the prediagnosis of intracranial hypotension. At the MRI, there were bilaterally cerebellar hemispheric fusiform hemorrhages which confirmed on conventional sequences. No enhancement was seen on the postcontrast T1-weighted MR image and no underlying lesions were identified. At baseline assessment the lumbar CT, after injection of intrathecal non-ionic contrast agent, confirmed CSF fistula formation. At 3-month follow-up, the postoperative CSF fistula formation had resolved spontaneously and she had no symptoms or neurologic deficits. **DISCUSSION:** RCH (remote cerebellar hemorrhage) is an alarming but seldom reported complication of supratentorial craniotomies. This unique case presentation of RCH after spinal operation supports the hypothesis of cerebellar sagging due to CSF hypovolemia. But RCH is also a self-limiting phenomenon, and further surgical and diagnostic evaluation is not required as in our case.

T132) A Difficult Case : Dr. Mohammad M. Khan¹, Dr. Loay Al-dhahir¹, Wesam Al-dhahir² : 1. General Medicine, Queen's Hospital, Essex, United Kingdom. 2. The Royal College of Physicians, Dublin, Ireland.

BACKGROUND: Brain metastasis is not uncommon, affecting 20%–40% of cancer patients. After diagnosis, prognosis is poor. The survival is months in this group of patients. **CASE:** A 65-year-old gentleman was referred from clinic with diplopia, slurred speech, numbness on the left side and ophthalmoplegia. He was having diplopia for the last few weeks. His medical history included prostatic hyperplasia, hypertension and hypercholesterolemia. Neurological examination was normal except slight bilateral ptosis and ataxic gate. Genital and per rectal examination were unremarkable. MRI Scan of brain revealed three ring enhanced lesions. All routine blood results are normal including PSA and other tumour markers. Toxoplasma serology, viral screen and ecynococcus serology were essentially normal. CT chest, abdomen and pelvis has been done which showed right adrenal gland enlargement which was suggestive of incidalectoma. Bone scan showed bony infiltration in illium. Subsequently the bone biopsy did not reveal any malignant cell. The whole body PET scan has been done but

did not add any new information. In a Multidisciplinary meeting, we decided to proceed for adrenal biopsy. But the interventional radiologist declined as the procedure was too risky because of the aorta. At some point we decided for stereotactic brain biopsy. But the patient and his wife declined. The patient was discharged with a clinical diagnosis of brain metastasis with unknown primary and put on oral steroid. The patient was admitted 3 months later with right cerebellar dysfunction with severe head tremor with truncal ataxia. All the blood test was repeated including paraneoplastic markers. During the hospital stay the patient suddenly developed worsening shortness of breath with desaturation. CTPA confirmed pulmonary embolism. After 3 days of ITU management the patient died. The post mortem revealed malignant cells in the different parts of the brain. Subsequently the further tests did not reveal the origin.

T133) PATIENTS ADMITTED TO THE EMERGENCY DEPARTMENT OF OUR TERTIARY HOSPITAL WITH STROKE SYMPTOMS : Natalia Lekerika-Royo¹, Eunate Arana-Arri¹, Lorena Lopez-Roldan¹, Marivi Montejo-Olivares¹, Aitor García de Vicuña Meléndez¹, Daniel Izaguirre Díaz de Lezana¹ : 1. Cruces Hospital, Osakidetza, Barakaldo, Bizkaia, Spain.

INTRODUCTION: Aim: To analyze the epidemiological profile, clinical characteristics and morbidity and mortality of patients admitted to the emergency department with stroke. **METHODS:** Cross-sectional study of the EHS visits by patients older than 14 years, attended during five months. The data were recorded analysing the clinical data sheet and clinical records. **RESULTS:** 339 patients were admitted to the emergency department in the study period. The mean age was 75.39 years (range: 34-95 years). 49% were female. The main risk factors were: hypertension (57.5%), dyslipidemia (29.3%), diabetes mellitus (25.1%) and atrial-fibrillation (17.9%). 30.4% had a previous stroke (89.6% ischemic). 14.9% were receiving anticoagulant treatment and the 61.4% of them were not correctly treated. The main reason for consultation was alteration of language (39.8%) followed by: plegia (24.6%) and alteration of consciousness (15.9%). 69.6% came after 3 hours from the onset of the symptoms. We observed 27% of the ECG had pathology (73% atrial fibrillation). A CT-scan was performed on all patients and the morbidities observed were as follows: intracranial hemorrhage (23.4%), lacunar infarcts (42.9%), multiinfarcts (29.9%), subarachnoid hemorrhage (0.5%), hematoma subdural (2.8%) and meningioma (0.5%). We administered fibrinolysis in 1.8% of the patients. The reasons why it was not administered were: more than 3 hours since the beginning of the symptoms (36.1%), older than 80 years (28.1%) and hemorrhagic stroke (18.8%). No treatment was discontinued and only one case was complicated by bleeding. 13.7% died, 48.7% due to complications of symptoms associated with the stroke. **CONCLUSIONS:** Even when we have technologically advanced treatments the main causes of stroke continue to be the same, and mainly related to life style. Moreover, taking into account that existing treatments depend on time frames, more efforts should be performed to educate patients to identify the first symptoms of a stroke.

T134) Early Diffusion Weighted MRI as a Negative Predictor for Disabling Stroke after ABCD2 Score Risk Categorization in TIA Patients : Andrew W. Asimos¹, Wayne D. Rosamond², Anna M. Johnson², Marlow F. Price¹, Kathryn M. Rose², Carol V. Murphy², Charles H. Tegeler³, Ana Felix⁴ : 1. Carolinas Medical Center, Charlotte, NC, USA. 2. University of North Carolina School of Public Health, Chapel

Hill, NC, USA. 3. Wake Forest University School of Medicine, Winston-Salem, NC, USA. 4. University of North Carolina School of Medicine, Chapel Hill, NC, USA.

INTRODUCTION: The prognostic value early Diffusion Weighted Magnetic Resonance Imaging (DWMRI) adds in the setting of TIA, after risk stratification by a clinical score, is unclear. The purpose of this study is to evaluate, after ABCD2 score risk categorization in admitted Transient Ischemic Attack (TIA) patients, if negative DWMRI performed within 24 hours of symptom onset improves upon the identification of patients at low risk for experiencing a disabling stroke within 90 days. **METHODS:** At 15 North Carolina hospitals, we enrolled a prospective, non-consecutive sample of admitted TIA patients. We excluded patients not undergoing a DWMRI within 24 hours of admission and patients for whom a dichotomized (\leq or >3) ABCD2 score could not be calculated. We conducted a medical record review to determine disabling ischemic stroke outcomes within 90 days. **RESULTS:** Over 35 months, 944 TIA patients met inclusion criteria, of whom 4% (n=41) had a disabling ischemic stroke within 90 days. In analyses stratified by low versus moderate/high ABCD2 score, the combination of a low risk ABCD2 score and a negative early DWMRI had excellent sensitivity (100%, 95% CI 34-100) for identifying low risk patients. In patients classified as moderate to high risk, a negative early DWMRI predicted a low risk of disabling ischemic stroke within 90 days (sensitivity 92%, 95% CI 80-97; NLR 0.11, 95% CI 0.04-0.32).

CONCLUSION: After risk stratification by the ABCD2 score, early DWMRI enhances the prediction of a low risk for disabling ischemic stroke within 90 days. Further study is warranted, in a large, consecutive TIA population, of early DWMRI as a sensitive, negative predictor for disabling stroke within 90 days.

T138) The Prevalence of Sub-Therapeutic Anticonvulsant Levels in Southern Puerto Rico: Emergency Department Patient Profile : Carlos F. Garcia-Gubern¹ : 1. Emergency Medicine, Hospital San Lucas/Ponce School of Medicine, San Juan, PR, USA.

INTRODUCTION: Sub-therapeutic anti-epileptic drug levels are the main reason for the triggering of seizures that lead to Emergency Department visits. **METHODS:** We conducted a retrospective study. Medical charts were reviewed using a questionnaire to obtain data on all patients with seizures presenting to the HESL-Ponce Emergency Department.

Patients of all ages were included. **RESULTS:** 200 charts were reviewed. 16% of patients on antiepileptic had no levels ordered at all. 10% of charts reviewed had no documented neurological evaluation. Among the patients with sub-therapeutic levels: 67% had government owned/offered medical insurance, 20% had private insurance and 13% were uninsured. Drowsiness, headache and confusion were the most common symptoms in adults. 24 cases had head trauma (12%)

Febrile Seizures was diagnosed in 35.2% of pediatric cases.

In 25 cases, the patients had neurological deficits upon arrival (12.5%). 3 cases of status epilepticus (1.5%) were reviewed. The most common comorbidities in the entire sample were coronary artery disease and diabetes mellitus

CONCLUSION: A considerable amount of seizure patients seen in the Emergency

Department present with sub-therapeutic anti-epileptic levels, a higher percentage when compared to US numbers (33% vs. 44%).

T139) Symptomatic profile of stroke patients in Southern Puerto Rico : Carlos F. Garcia-Gubern¹ : 1. Emergency Medicine, Hospital San Lucas/ Ponce School of Medicine, San Juan, PR, USA.

INTRODUCTION: In most, if not all, of Puerto Rico, thrombolytic therapy (tissue-plasminogen activator, or tPA) for acute ischemic stroke is not offered. Casual conversations with doctors reveal a number of contributing reasons for which this widely accepted guideline is not applied. **METHODS:** A cross-sectional, IRB approved study was conducted using data from patients' medical records (n=277 of 500) presenting to Hospital Episcopal San Lucas Emergency Room at Ponce, PR during a time period of one year. Data gathering was completed using a template including patients' gender, age, symptoms, laboratories, imaging and tPA contraindications. A preliminary profile of stroke patients in Southern Puerto Rico was obtained using different measures of central tendency. **RESULTS:** Male:female ratio was approximately 1:1. The vast majority of patients were between 61-80 years old with a mean age of 69. More than half of the patients are overweight or obese with a mean BMI of 28 kg/m². Mean MAP was 101 mmHg with the majority of patients having high blood pressure at the time of evaluation. Average blood glucose was >120 mg/dL with a mean of 141 mg/dL. Most common symptoms on presentation to the ER were weakness or numbness and trouble speaking. The most common co-morbidity among patients was hypertension. The most common reason why tPA was contraindicated in Southern PR stroke patients was time window. **CONCLUSIONS:** Hypertension remains as one of the main risk factors for ischemic strokes in Southern Puerto Rico population. These results suggest that the focus of stroke prevention education should continue to emphasize traditional stroke risk factors therefore adherence and compliance to treatment needs to be enforced. In this study the main contraindication to administer tPA was the delay of patient presentation from home and from primary level institutions.

A strong emphasize should be made to primary physicians and the general public to alert them of this therapeutic window for thrombolytic therapy as well as the EMS system to transport these patients to institutions where definitive treatment can be offered.

T140) LP in SAH: gold standard or unnecessary procedure? : Adam Reuben¹, Hannah Stewart¹ : 1. ED, Royal Devon & Exeter NHS Trust, Exeter, United Kingdom.

INTRODUCTION: Historical evidence suggests that CT imaging is not of sufficient sensitivity to detect all subarachnoid haemorrhages. Current guidelines mandate all patients with suspected SAH require an LP to establish a definitive diagnosis. This study sought to establish the true sensitivity of modern CT scanners, specifically within 12 hours of ictus. **METHODS:** We carried out a 2 year retrospective review at the Royal Devon and Exeter Hospital of patients evaluated for suspected SAH. Patients were identified by interrogation of the clinical record systems of the ED, the radiology department and the medical unit. Included cases were evaluated for presenting complaint, time of symptom onset and result of CT and

LP.

RESULTS: 324 patients were evaluated for suspected SAH. 80 were excluded from the subsequent analysis because of a clear alternative diagnosis at the time of presentation, history of trauma or age less than 16. Of the remaining 244 patients, 64 patients had CT scans demonstrating blood in the subarachnoid space (positive) and 179 patients had normal CT head scans (negative). 158 patients (88%) with a negative CT went on to have a negative LP. 2 patients (1%) with a negative CT had a positive LP suggestive of an occult subarachnoid bleed. Of the 9 patients with an equivocal LP, 2 went onto have a positive CT angiogram. A further 10 patients did not have an LP (either aborted attempt or refused), only 3 of whom had CT angiograms performed, all of which were normal. CT has 94% sensitivity (95% CI 84 to 98%) for detecting SAH with a positive predictive value of 95% (95% CI 86 to 98%) and negative predictive value of 98% (95% CI 94 to 99%).

CONCLUSIONS: The results do not support the use of CT head as a single diagnostic tool for the evaluation of patients for suspected SAH. Whilst only 1 patient of 137 evaluated for suspected SAH appears to have had a proven SAH, failure to identify a potentially life-threatening condition amenable to relatively easy intervention is unacceptable. That over 50% of patients with a negative CT head did not have a diagnostic LP suggests that further extrapolation of this is not possible. There may be value in a prospective collection of data.

T141) EMERGENCY SPONTANEOUS SPINAL EPIDURAL HAEMATOMA (SEH): A REPORT OF TWO CASES : Beatriz Sierra¹, Jose Alberto García Noain¹, Daniel Saénz¹, Francisco Jose Ruiz¹, Carolina Valiente¹, Teresa Escolar¹, Maria Carmen Gonzalvo¹ : 1. EMERGENCY DEPARTMENT, HOSPITAL CLINICO UNIVERSITARIO LOZANO BLESA, Zaragoza, Spain.

BACKGROUND: SEH is an uncommon condition. The most common causes are injuries or invasive procedures, but, in the absence of the above mentioned factors, it is called spontaneous and can be related to platelet aggregation inhibitors and/or anticoagulation therapies, vascular malformations or changes in the epidural plexus. It has a high clinical variability and the diagnostic presumption must be early. The test of choice is MRI and the treatment is usually surgical. Two cases attended to at the emergency room (ER) of our hospital are reported. **CASES:** Case 1: A 53-year old male patient, treated with platelet aggregation inhibitors, presented to the ER for sudden low back pain and progressive paraparesis in both lower extremities. The physical examination shows plegia, lack of osteotendinous reflexes, and complete anaesthesia of both lower extremities. An emergency MRI confirms epidural haematoma of D6 to D10 with marrow compression. Decompressive laminectomy is performed urgently with evacuation of haematoma. Case 2: A 72-year old male patient presented to the ER complaining of cervical pain radiating to the left upper extremity and progressive paresis in it. The physical examination shows plegia of the left upper extremity and suppression of osteotendinous reflexes. Urgent MRI evidences C2-D4 epidural haematoma and laminectomy is performed with evacuation of it. **DISCUSSION:** The cause of SEH is unknown in up to 40%, and the most common cause is discussed to be breakage of the walls of the epidural venous plexus for increased pressure without ruling out arterial causes. It is most commonly seen in adult males in the cervical and thoracic spine and the most common symptoms are pain with onset of partial motor deficits progressing to complete palsy. The differential diagnosis must be performed with other neurological

conditions. Treatment is always surgical in case of marrow compression and must be early. The prognosis is usually always favourable with early intervention, and it will be influenced by the time from the onset of symptoms to the intervention, the degree of neurological deficit and the site of the injury.

T142) SPONTANEOUS SPINAL EPIDURAL HAEMATOMA IN THE EMERGENCY ROOM : Jose A. García Noain¹, Beatriz Sierra Bergua¹, Francisco Jose Ruiz Ruiz¹, Daniel Saenz Abad¹, Carmen Gonzalvo Liarte¹, Miguel Rivas Jimenz¹ : 1. Emergency Department, SALUD Aragon, Zaragoza, Zaragoza, Spain.

BACKGROUND: Spinal epidural haematoma (SEH) is an uncommon condition. In the absence of an injury it is called spontaneous epidural haematoma. **CASES:** Case 1: A 53-year old male patient, with a history of AMI-type ischemic heart disease, presented to the emergency room for sudden low back pain and progressive paraparesis in both lower extremities. The emergency physical examination shows plegia, lack of osteotendinous reflexes, and complete anaesthesia of them. An emergency MRI is performed that confirms epidural haematoma of D6 to D10 and a decompressive D7-D9 laminectomy is made. Case 2: A 72-year old male patient with a past medical history of hypertension presented to the emergency room complaining of spontaneous cervical pain, irradiating to the left upper extremity and progressive paresis in it. The physical examination shows plegia of the extremity, paresis of the others, preserved sensitivity, suppression of osteotendinous reflexes, and bilateral extensor CPR. Urgent MRI is performed, that evidences C2-D4 epidural haematoma and a laminectomy is made with partial symptoms recovery. Case 3: A 81-year old woman with a past medical history of hypertension, atrial fibrillation and ischemic stroke presented to the emergency room due to sudden pain and loss of strength in the right lower extremity and hypoesthesia in the lower hemibody. An urgent MRI shows a large epidural haematoma in D10 to L3. Urgent surgery is performed and the clinical outcome is favourable. **DISCUSSION:** Three cases of SEH are reported. In the literature review, the cause is unknown in up to 40%, and It is a most common condition in adult males, in the cervical and thoracic spine and the symptom is pain with onset of partial motor deficits progressing to complete palsy. The differential diagnosis at the emergency room must be performed with other neurological conditions, (radiculopathies, space-occupying lesions, etc). Treatment is always surgical in case of marrow compression and must be early. The prognosis will be influenced by the time from the onset of symptoms to the intervention, the degree of neurological deficit and the site of the injury.

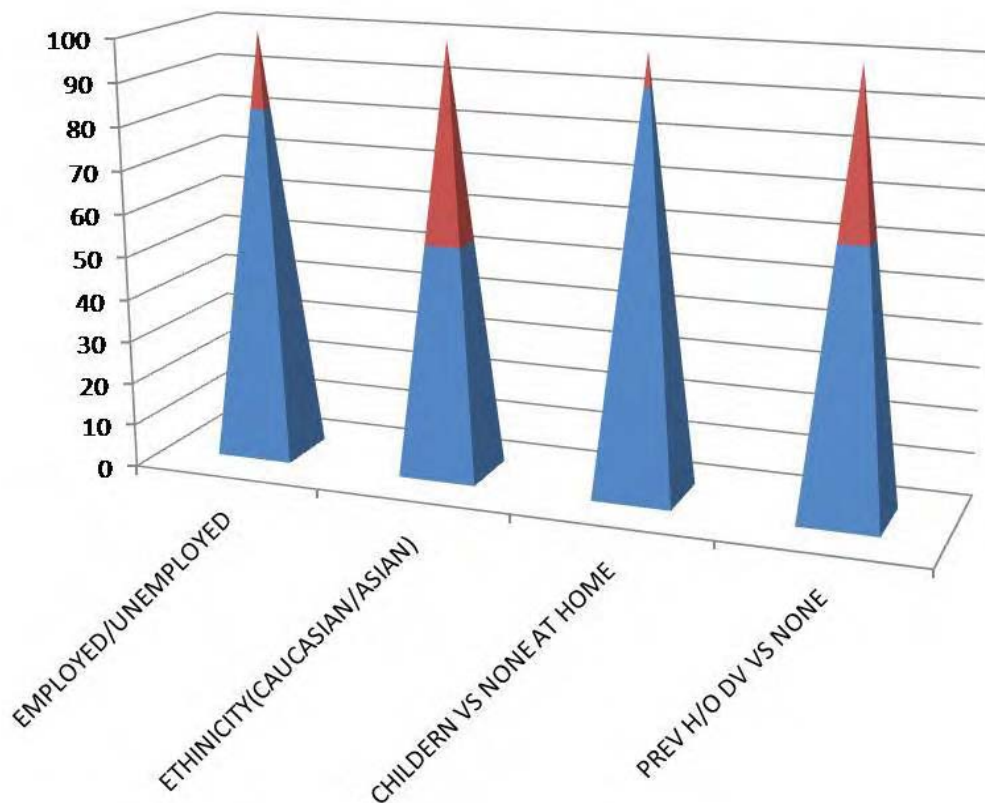
T143) Post Concussion Syndrome in Domestic Violence: Is It That Common? The Bradford Experience : Farooq Pasha¹, Peter Bradley¹ : 1. Accident and Emergency, Bradford Royal Infirmary, Bradford, WestYorkshire, United Kingdom.

INTRODUCTION: Every year 1.5-3 million women experience domestic violence in UK with the incidence rates ranging from 8.4% to 22%. Domestic violence assaults can cause MTBI as a result of blows to the head /face or strangulation. Studies have estimated blows to the head or face occur in 50% to 90% of these assaults. Abused women typically lack knowledge of long term consequences of a brain injury and do not seek specialized services.

AIMS: The object of this study was to assess the incidence of post concussive symptoms in women sustaining head injury as a result of domestic violence. **METHODS:** Between June 2007 and June 2008 our large inner city Emergency Department saw 5883 adult patients with minor head injury. 295 of these patients were noted to have significant post concussive symptoms (PCS). We retrospectively analyzed the records of these patients for incidence of domestic violence, social demographics, clinical sign and symptoms, mechanism of head injury and health status of individuals at the time of injury. **RESULTS:** Out of 295 patients with MTBI 65(22%) women sustained head/facial injury as a result of domestic violence. We found out that 64% women reattending ED with concussion had been assaulted in domestic setting with socioeconomic circumstances and presence of mental health problems resulting in high risk for PCS. **CONCLUSION:** This data is the tip of the iceberg. Study results argue greater vigilance in screening domestic violence victims for mild traumatic brain injury because early identification and treatment of any concussive symptoms seems to diminish their adverse impact on treatment and rehabilitation outcome.

HEAD INJURED WOMEN WITH PCS SECONDARY TO DOMESTIC VIOLENCE

AGE	n=65
16-19	12
20-29	26
30-45	22
46 AND OLDER	05
PART OF BODY INJURED	PERCENTAGE%
HEAD/FACE	92%/28%
UPPER TRUNK	14%
LOWER TRUNK	4%
HANDS/ARMS	19%
FEET/LEGS	6%
OTHER	4%
CLINICAL SYMPTOMS	PERCENTAGE%
HEADACHE	28%
DIZZINESS	24%
CONFUSION	26%
MEMORY LOSS	36%
FATIGUE	67%
SLEEP DIFFICULTY	66%
IRRITABILITY	43%
DIFF TO CONCENTRATE	42%



SOCIO DEMOGRAPHICS OF PCS WOMEN WITH DOMESTIC VIOLENCE

T144) Antioxidant effect of red ginseng on focal brain ischemia/reperfusion injury in rat : Young Gwan Ko¹ : 1. Department of Emergency Medicine, Kyung Hee University Medical Center, Seoul, Korea, South.

Background: Production of free radical species in brain tissues is known to cause brain ischemia/reperfusion (I/R) injury. Therefore, free radical scavengers play an important role in the prevention of brain I/R injury. We aimed to investigate the effects of red ginseng (RG) on NO production, catalase, antioxidant status, and lipid peroxidation in a rat model of transient middle cerebral artery occlusion (MCAO).

Methods: Sprague-Dawley rats were randomly divided into 3 groups (one sham operation group and two experimental groups). The rats' left MCA was temporarily occluded (120 min), with direct cortical blood flow and temperature monitoring. Sensorimotor function was assessed using a neurological score prior to the MCAO and daily for 7 days following the MCAO. After 1 h reperfusion and twice daily during the experiment, the experimental group was given RG (4 ml/kg/day) per oral route (PO) and the other groups received 0.9% saline

after transient MCAO. Seven days later we assessed the levels of superoxide dismutase (SOD), glutathione peroxidase (GSH-PX), catalase, and malondialdehyde (MDA) in the brain tissue. Tissue was processed for infarct volume assessment using 2,3,5-triphenyltetrazolium chloride staining.

Results: SOD, catalase, and GSH-PX levels were significantly increased and MDA were significantly reduced in rats with RG feeding after I/R when compared to rats with saline feeding after I/R ($p < 0.05$). The motor and sensory deficit score of RG feeding group was significantly lower than saline feeding groups ($p < 0.05$).

Conclusion: RG reduced the ROS activity by both decreasing oxidative stress and NO overproduction in the brain. Our results implicate the oxidative damage in recovery of spontaneous circulation patients might be protected by RG ingestion, with its antioxidant effects.

T145) MANAGEMENT OF STROKE IN EMERGENCY DEPARTMENTS: REGICTUS STUDY : Manuel S. Moya-Mir¹, José Alvarez-Sabin¹, Julio J. Secades¹, Joaquin Serena-Leal¹ : 1. REGICTUS, Barcelona, Spain.

INTRODUCTION: OBJECTIVES: To determine the management of acute phase stroke patients in Spanish hospitals lacking a Stroke Unit (SU). METHODS: A prospective multicenter study was performed between March 1 and July 1, 2008, in 64 Spanish hospitals lacking a SU. The inclusion criteria were: a diagnosis of ischemic or hemorrhagic stroke. The patient origin, antecedents, comorbidities, time to reach the hospital and to receive medical care, management, and in-hospital course were documented. RESULTS: Data was collected from 1297 patients. The mean age was 72.8 ± 12.3 years; 54.9% (642) were males. Arterial hypertension was present in 898 subjects (70.1%), dyslipidemia in 495 (39%), diabetes mellitus in 410 (32.3%), atrial fibrillation in 257 (20.6%), and ischemic heart disease in 228 (18.2%), A total of 23.7% (299) had suffered previous stroke.

Reception time for medical care in the Emergency Department was under three hours in 571 patients (45.6%), and between 3-6 hours in 318 (25.4%). Reception time for care from the final patient supervising physician was previous to the first 3 hours in 156 patients (12.6%), and between 3-6 hours in 220 (17.8%). Initial management was received from the emergency care physician in 72.1% of the cases. The mean NIH score was 8.1 ± 7.4 . The brain CAT findings proved normal in 391 patients (30.3%) and pathological in 888 (68.8%). Overall mortality was 16.8% (218), with a mean hospital stay of 9 days. In the hospitals with a Neurology Department there were no differences in the percentage of patients attended in under three hours (47.2% vs 43.3%), in contrast to the situation seen in the centers with a stroke code process (52.9% vs 43.1%). CONCLUSIONS: 1. Seventy-one percent of the patients receive attention during the first 6 hours following the stroke. 2. Emergency care physicians initially attend 72% of all cases. 3. The existence of a stroke code allows faster patient care. 4. Although 45% of the patients are attended before the first three hours, they are not sent to a reference center for revascularization therapy.

T146) Do Patients with Moderately Severe Migraines Attempt Abortive Medication Prior to Visiting the Emergency Department? : Renee Riggs², Fred Fiessler¹, Richard Shih¹ : 1. Morristown Memorial

Hospital, Morristown, NJ, USA. 2. UMDNJ- Robert Wood Johnson Medical School at New Brunswick, New Brunswick, NJ, USA.

INTRODUCTION: Migraines are one of the most common primary headaches prompting an emergency department (ED) visit. Those patient meeting International Headache Society Criteria (IHSC) by definition have a recurrent (>5 similar episodes) disease. With the high cost (financial/crowding/time) associated with ED visits, it would be expected that patients attempt abortive medications prior to coming to the ED Objective: To determine if patients meeting the IHSC for migraine attempt pre-hospital abortive medications. **METHODS:** Design: Prospective, cohort study, Participants: Patients > 17 years of age with meeting the IHSC of migraine headache. The study was performed at a suburban community hospital with an annual volume of 70,000 visits from over a three year time period. Only those patients with a VAS > 5 (0-10) were included. Protocol: Demographic and historical information was collected utilizing a standard closed-questionnaire. Statistics: Chi-Square and Mann-Whitney test were utilized, with a significant P-value set at 0.05. **RESULTS:** A total of 181 patients were diagnosed with migraine. Eighty-seven percent (156/180) were female. The mean age was 38 (+/- 9). Twenty-four patients were excluded for not meeting the IHSC for migraine, leaving 156 patients for analysis. Eleven percent (n=18/156) did not attempt abortive medication Pre-ED. Males did not use pre-ED meds 4% (N=1/24) of the time compared to 11% (n=17/156) of women (p=0.32). Initial VAS upon arrival was 8.1 for those not using pre-ED medications compared to 8.9 in the "medication" group (p=0.03). The most common medications utilized were: acetaminophen (N=53), NSAIDS (N=32), Imitrex (n=30), and other (n=38). **CONCLUSION:** A small subset of patients with migraines do not attempt pre-ED medications.

T147) THE ROLE OF NEUROLOGICAL DISORDERS IN PATIENTS WITH ALTERED MENTAL STATUS IN THE EMERGENCY DEPARTMENT : Mustafa Yilmaz¹, Zeynep Kekec¹, Mehmet O. Ay¹, Filiz Koc¹ : 1. Emergency Medicine, Cukurova University Medical School, Adana, Turkey.

INTRODUCTION: Consciousness is the skill of apprehending and evaluating correctly the stimulus from the environment. However, in daily practice, it is used in the same meaning with being awake. Meanwhile, decreasing alertness can be described as decreased consciousness. Aim: The purpose of our study is to evaluate the diagnosis, the examination results, the need for intubation and resuscitation and prognosis of the cases admitted to Emergency Department with altered mental status. **METHODS:** 319 cases which admitted to Cukurova University between 01.01.2007- 31.12.2008 were included to the study. **RESULTS:** On neurological examination; 202 cases (63.3%) had mental confusion and 117 cases (36.7%) had different rates of mental deterioration from lethargy to coma. The mean Glasgow Coma Scale GCS of the cases was 10.8. CT was performed in 247 (79.9%) cases and in 132 cases acute, subacute or chronic infarct; in 56 cases intracranial bleeding; in 42 cases subarachnoid hemorrhage; in 35 cases intracranial mass and in 12 cases edema were found, while 12 cases were found to be normal. 90 patients were intubated while 42 of them were treated on ventilator. In 15 patients (4.7%) cardiopulmonary resuscitation was performed. 294 patients were hospitalized while 11 patients wanted to be discharged; 9

patients were transferred to another medical center as there were no beds for them and 5 patients died in emergency transferred to department. CONCLUSION: In our series, the most common cause of altered mental status due to neurological disorders was stroke and thus emergency physicians should know stroke symptoms and management very well.

T148) DETERMINATION OF PATIENTS ADMITTED TO EMERGENCY DEPARTMENT WITH ALTERED MENTAL STATUS : Mehmet O. Ay¹, Zeynep Kecec¹, Mustafa Yilmaz¹, Filiz Koc¹ : 1. Emergency Medicine, Cukurova University Medical school, Adana, Turkey.

INTRODUCTION: Consciousness is the situation that the person knows about his self and surrounding. We often see diseases that causes a disorder of unconsciousness frequently in Emergency Department (ED). The causes of the admissions are usually internal or neurological disorders. In differential diagnosis, metabolic diseases, hypoglycemia, serious systemic infections, shock, epilepsy and seizures, hypothermia and hyperthermia, hypercapnia, hypoxia, intoxication, stroke and many other diseases should be kept in mind. **Objective:** In this study we determined the patient profiles, duration time in ED, neurological examination findings, diagnosis, necessity of intubation, resuscitation, and hospitalization in the patients admitted to the ED with the chief complaint of unconsciousness. **METHODS:** We retrospectively reviewed the Cukurova University ED records between 01.01.2007 to 31.12.2008 for cases of unconsciousness. **RESULTS:** There were 795 patients with a mean age 58,38 (15-97) years, 453 of them (58%) were male and 342 (42%) were female included in this study. We determined that the patients were mostly admitted to the ED from 08:00-16:00 time interval, then 16.00- 24.00. The average length of time patients were in the ED was 6 hours 12 minutes. The most common diagnosis was neurological diseases (n:319; 40,1%) and other diagnosis were metabolic diseases (n:92; 11,5%), oncological and hematological diseases (n:90; 1,3%), liver diseases (hepatic coma, fulminant hepatitis; n:80; 10%), infections (sepsis, meningitis, encephalitis; n:76; 9,5%), renal failure (n:33; 4,1%), asthma and chronic obstructive lung disease (n:11; 1,4%), preeclampsia and HELLP (n:9; 1,1%), alcoholism (n:4; 0,5%), malignant hyperthermia (n:3; 0,4%). **CONCLUSION:** The most common causes of altered mental status in ED were neurological diseases. The other causes were metabolic and systemic diseases (n:476 ;%59,8) and these diseases can be threatened without mortality and morbidity if diagnosis is identified as soon as possible.

T149) Relationship between risk factors with mortality of stroke : Mohammad Manouchehrifar¹, Hamidreza Hatamabadi¹ : 1. emergency, sbmu, Tehran, tehran, Iran.

INTRODUCTION:Stroke is a heterogeneous, multifactorial disease regulated by modifiable and nonmodifiable risk factors. We aimed to determine relationship between age, sex, hypertension(HTN), diabetis mellitus(DM), abnormal electrocardiogram (ECG), abnormal Doppler sonography of cervical arteries (DSOCA), focal neurologic deficit (dysarthria, paresis) and mortality after 90 days of stroke. **METHODS:** The study population consisted of 301 first-ever stroke patients (159 female, 142 male) treated at the emergency department for five month. We collected a data form at several visits and documented the risk factors and signs; the mortality of patients after 90 days of stroke, were assisted, and analyzed the

significance of the variables in mortality determined by statistical chi-square test. **RESULTS:** HTN was significantly associated risk factor ($p < 0.001$) with 90 days mortality of stroke. Abnormal ECG ($p = 0.006$) and abnormal DSOCA ($p = 0.023$) were associated with 90-day mortality after stroke; whereas the relationship between sex ($p > 0.05$), age ($p > 0.05$), DM ($p = 0.935$) with mortality, wasn't significant. Paresis ($p = 0.018$), as a sign of severity in stroke, was associated with mortality but dysarthria, as another sign, wasn't ($p = 0.07$). **CONCLUSIONS:** An improvement in acute-stroke management, possibly evolution of cerebrovascular risk factors, and decrease mortality is reflected by changes in the risk factors and outcome of first-ever stroke patients, that presented to the emergency department.

T150) Paraplegia caused by a postoperative hematoma due to the combined intake of escitalopram and diclofenac : Sabrina De Winter¹, Robert Oonk¹, Agnes Meulemans¹, Sandra Verelst¹, Marc B. Sabbe¹ : 1. Emergency Medicine, University Hospitals Leuven, Leuven, Belgium.

BACKGROUND: Selective serotonin reuptake inhibitors (SSRIs) are extensively used for the treatment of multiple psychiatric conditions. Several case reports however describe the evidence on SSRIs leading to bleeding complications. The concomitant use of nonsteroidal anti-inflammatory drugs (NSAIDs) probably enhance this risk. **CASE:** A 65-year-old woman presented with neurogenic claudication due to spinal canal stenosis for which a decompressive lumbar laminectomy on levels L1-L2, L2-L3 and L3-L4 was performed in a rural hospital. A few hours after surgery she developed paralysis of both legs and was transferred to a tertiary care facility. A nuclear magnetic resonance of the lumbar spinal column showed a hematoma for which urgent surgery was performed. The next day however paralysis of the legs reoccurred. A computed tomography revealed a new hematoma extending towards dorsal spinal level 10 for which repeated surgical drainage was performed. Extensive coagulation examination showed an iatrogenic platelet dysfunction. Medications on admission included lisinopril/hydrochlorothiazide, amlodipine, atorvastatin, escitalopram, and pramipexol. Acetaminophen, diclofenac and ranitidine were administered postoperatively. Diclofenac and escitalopram were ceased after the last surgical drainage; the latter was replaced by mirtazapine. The patient recovered gradually from her paralysis. **DISCUSSION:** This case report confirms the evidence on SSRIs and the risk of bleeding especially with concomitant use of NSAIDs. The latter are known to increase the risk of gastro-intestinal bleeding by inhibiting COX-1 in the platelets and on the gastrointestinal mucosa. On the other hand, SSRIs block the reuptake of serotonin into platelets and down regulate serotonin receptors on the outer surface of platelets. Since the release of stored serotonin plays an important role in platelet aggregation SSRIs may decrease platelet function and enhance bleeding risk. This case therefore illustrates the importance of a thorough medication history and being aware of adverse drug reactions.

T151) Emergency Department Analgesia : Gamal Eldin A. Khalifa¹ : 1. Al Rahba Hospital, Abu Dhabi, United Arab Emirates.

INTRODUCTION: Pain is the most common reason patients seek care in emergency departments (ED), and emergency physicians treat many patients who have severe pain,

ranging from shingles to long bone fractures to myocardial infarction. The volume and severity of pain-related problems make pain management a core skill in emergency medicine, yet there is ongoing evidence that pain is inadequately treated in the ED. When pain is mild, simple analgesics alone may suffice. For more severe pain, it is often necessary to use potent analgesic and analgesic combinations. Objective: Is to assess the appropriateness of analgesics used in ED. METHODS: To characterize the profile of analgesics used in the ED in year 2006, picking a sample of patient charts and reviewing the pain scores to assess the appropriateness of administered analgesics. RESULTS: Diclofenac 75 mg IM injections were used in 4230 patients, Mepridine IM or IV in 93 patients, Tramadol IM or IV injections in 530 patients and Morphine in 1096 patients. Diclofenac was used in 35% for patients with moderate to severe pain. The doses of morphine were small 2-5 mg in 42% of patients. Combination of analgesics was rarely used. CONCLUSION: Oligoanalgesia in the ED is a widespread problem; the choice of analgesics and the doses are inappropriate.

T152) The Importance of the Pharmacist in Reporting Adverse Drug Reactions in the Emergency Department : Samuel B. Chaim¹ : 1. Emergency Department, Asaf Harofe Medical Center, Beer Yaakov, Israel.

INTRODUCTION: Adverse drug reactions (ADRs) are a common cause of morbidity and mortality. Diseases caused by ADRs are a frequent cause for hospitalization. ADRs reporting takes an important place in improving the medical knowledge. The objective of the current study was to evaluate whether the presence of a pharmacist in the emergency department will increase ADRs identification and the reporting to the pharmacovigilance unit. METHODS: The study was performed in the emergency department of a tertiary 792 beds hospital in Israel. The study was composed of two phases, 6 weeks each. Phase one, followed an introductory lecture regarding the importance of ADR's reporting, without pharmacist intervention. In phase two, all admission charts were screened by the attended pharmacist, in order to identify patients who may present with an ADR. All charts of patients admitted to the emergency department during morning shifts (9 a.m to 2 p.m) were evaluated by the pharmacist and the physician. When ADR was suspected the patient was interviewed by the pharmacist using a structured questionnaire. The main outcome measure was the number of reported ADR's by the medical ward to the pharmacovigilance website. RESULTS: During 48 days of the baseline period and 48 days of the study period, 1541 and 1544 patients were admitted to the emergency department, respectively. No ADR was reported during the baseline period. During the study period, 61 of the patients were suspected for presenting an ADR, 30 out of the 61 (49%) were identified as an ADR and reported. The number of reported ADR's was significantly higher during the study period ($p < 0.01$). Five out of 30 (16.7%) patients were hospitalized for suspected ADR. 16 out of 30 (53.3%) patients were hospitalized for other reasons. 2 (6.67%) of the ADRs were found to be highly probable, 14 (47%) were probable and 14 (47%) possible. Thirteen (43.3%) of the 30 ADR's were found to be preventable. Twelve (40%) of the ADRs were life threatening according to the WHO criteria, 2 (6.67%) caused permanent or significant disability and 1 (3.34%) lead to the patients hospitalization. CONCLUSIONS: Our results show clearly that the presence of a pharmacist in the emergency department is a major contribution to the diagnosis, care

management and reporting of ADRs.

T153) The Importance of the Pharmacist in Reporting Adverse Drug Reactions in the Emergency Department : Samuel B. Chaim¹ : 1. Emergency Department, Asaf Harofe Medical Center, Beer Yaakov, Israel.

INTRODUCTION: Adverse drug reactions (ADRs) are a common cause of morbidity and mortality. However, spontaneous reporting of ADR's is partial and problematic worldwide. Diseases caused by ADRs are a frequent cause for hospitalization. Whereas, relation between drugs resulting a disease is not well defined. As a result ADRs reporting takes an important place in improving the medical knowledge. The objective of the current study was to evaluate whether the presence of a pharmacist in the emergency department will increase ADRs identification and the reporting to the pharmacovigilance unit. **METHODS:** This study was performed in the emergency department of a tertiary 792 beds hospital in Israel. The study was composed of two phases, 6 weeks each. Phase one, followed an introductory lecture regarding the importance of ADR's reporting, without pharmacist intervention. In phase two, all admission charts were screened by the attended pharmacist, in order to identify patients who may present with an ADR. All charts of patients admitted to the emergency department during morning shifts (9 a.m to 2 p.m) were evaluated by the pharmacist and the physician. When ADR was suspected the patient was interviewed by the pharmacist using a structured questionnaire. The main outcome measure was the number of reported ADR's by the medical ward to the pharmacovigilance website. **RESULTS:** During 48 days of the baseline period and 48 days of the study period, 1541 and 1544 patients were admitted to the emergency department, respectively. No ADR was reported during the baseline period. During the study period, 61 of the patients were suspected for presenting an ADR, 30 out of the 61 (49%) were identified as an ADR and reported. The number of reported ADR's was significantly higher during the study period ($p < 0.01$). Five out of 30 (16.7%) patients were hospitalized for suspected ADR. 16 out of 30 (53.3%) patients were hospitalized for other reasons. 2 (6.67%) of the ADRs were found to be highly probable, 14 (47%) were probable and 14 (47%) possible. Thirteen (43.3%) of the 30 ADR's were found to be preventable. Twelve (40%) of the ADRs were life threatening according to the WHO criteria, 2 (6.67%) caused permanent or significant disability and 1 (3.34%) lead to the patients hospitalization. **CONCLUSIONS:** Our results show clearly that the presence of a pharmacist in the emergency department is a major contribution to the diagnosis, care management and reporting of ADRs.

T154) Patients' satisfaction with emergency department: is there a relationship between filling out the questionnaire by the research assistant or the patient himself and the degree of satisfaction stated by the patient? : Sepideh Omidvari¹, Ali Azin², Ali Shahidzadeh Mahani², Farid Abolhasani³, Ali Montazeri¹, Hajieh Jaafari³, Fatemeh Hoseini³, Fatemeh Goodarzi⁴, Amir Mahmood Harirchi¹, Hamid Soori¹ : 1. Iranian Institute for Health Sciences Research, Mental Health Department, Tehran, Tehran, Iran. 2. Iranian Institute for Health Sciences Research, Social Medicine Department, Tehran, Tehran, Iran. 3. Tehran University of Medical Sciences, Tehran, Tehran, Iran. 4. Shahed University , Tehran, Tehran, Iran.

INTRODUCTION: In investigations on patients' satisfaction, the questionnaire is usually

given to the patients to participate in the study if they want to. If the patients are illiterate or partly literate or if they want, research assistants read the questions for them and insert their answers into the questionnaire. **METHODS:** A study using a valid (from a prior qualitative study) and reliable ($\alpha=0.93$) questionnaire was carried out in the emergency departments in 5 major teaching hospitals in Tehran, Iran. Patients ($n=823$) who had been in the emergency department for at least 10 hours, who were able to answer the questions without need for an interpreter, and did not have significant cognitive problems were included in the study. The study questionnaire was administered in confidential conditions. The questionnaire included 5 subscales, namely physicians' care, nursing care, behavioral aspects, physical comfort and hoteling, and being kept waiting. Research assistants had been trained, if necessary, to read the questions for the patients and insert their answers without any bias. **RESULTS:** In total, 441 questionnaires (53.6%) were filled out by the research assistants. There was a significant relationship between the way the questionnaire was filled out and overall satisfaction and subscales, namely behavioral aspects and being kept waiting too. In questionnaires which had been filled out by the patients themselves, dissatisfaction was reported more often, compared with those filled out by the research assistants. Age, educational and marital status of the patients in the two groups showed significant statistical differences. But using logistic regression revealed a significant relationship only between overall satisfaction and the way the questionnaire was filled out. **CONCLUSION:** The study findings indicate that there was a relationship between the way the questionnaire was filled out and the degree of overall satisfaction and patients' satisfaction considering some of the subscales.

T155) VOLUNTEERISM IN EMERGENCY MEDICINE RESIDENCY : Caroline M. Molins¹, Carmen J. Martinez-Martinez¹, Joanna Mercado¹ : 1. University of Puerto Rico-School of Medicine, San Juan, PR, USA.

INTRODUCTION: About 60.8 million people (26.2%) of the United States adult population served as volunteers in 2007. Of these, approximately 37% can be classified as healthcare practitioners and technicians. In 1993 the Women Physician's Health Study (WPHS) was published and it found that among emergency physicians that approximately 49% and 40% were involved in medical and non-medical volunteering respectively. **Objective:** To determine the level of participation and type of volunteerism among emergency physicians. **METHODS:** This cross-sectional study examines the level of participation and type of volunteerism that emergency medicine residencies and their residents are involved in. In April 2009, an email questionnaire was sent to all 148 emergency medicine residencies. This list was acquired from the American Medical Association Graduate Medical Education website. Contact information for each of these residencies was acquired and each was given 10 days to respond to the questionnaire. Statistical analysis was performed using Microsoft Excel 2007. **RESULTS:** One hundred and eight emergency medicine residencies were contacted. Twenty-six residencies were represented. Among those that responded, 49% were program directors or residency coordinators and 46% were residents. Seven programs have a community service project that is directly affiliated with their residency program. Of all the responses, 46% acknowledged that their residents participate in some form of volunteering. Service efforts were divided into medical and non-medical types of volunteering, in that 53% of residents participated in both. Two residency programs surveyed require residents

participate in volunteer work. **CONCLUSION:** Emergency medicine residents do volunteer their time to various activities, which include medical and non-medical services.

T156) Monitoring patient satisfaction in general emergency departments: factors influencing the future emergency department choice and recommending the emergency department to others : Sepideh Omidvari¹, Ali Azin², Ali Shahidzadeh Mahani², Ali Montazeri¹, Farid Abolhasani³, Fatemeh Hoseini³, Hajieh Jaafari³, Fatemeh Goodarzi⁴, Amir Mahmood Harirchi¹, Hamid Soori¹ : 1. Iranian Institute for Health Sciences Research, Mental Health Department, Tehran, Tehran, Iran. 2. Iranian Institute for Health Sciences Research, Social Medicine Department, Tehran, Tehran, Iran. 3. Tehran University of Medical Sciences, Tehran, Tehran, Iran. 4. Shahed University , Tehran, Tehran, Iran.

INTRODUCTION: Having a tendency to refer to the emergency department in the future and recommending health care services to others are important indicators of quality of care. Many of the questionnaires on measuring patients' satisfaction include questions about these two items. **METHODS:** A study was conducted in 3 major teaching hospitals of Tehran, Iran using purposive sampling (n=670) and a valid (from a prior qualitative study) and reliable ($\alpha=0.93$) questionnaire including 5 subscales, namely physicians' care, nursing care, behavioral aspects, physical comfort and hoteling, and being kept waiting. The questionnaire of the study included, in addition to 39 main variables, patients' willingness to refer to the emergency department in future, recommending the hospital to others and some other variables. Patients who had been in the emergency department for at least 10 hours, who were able to answer the questions without a need for an interpreter, did not have significant cognitive problems, and were well enough to answer the questions were included in the study. **RESULTS:** All five subscales and overall satisfaction were found to have a significant relationship with the two mentioned variables. But physicians' care (including sense of responsibility towards patients, being skilled, giving information, being kind, respectful to patients, being compassionate, having interest in work, and not being negligent) had the strongest correlation. Considering the correlation between each of the 39 main variables and the two variables, it was found that physicians' sense of responsibility towards patients had the strongest correlation. **CONCLUSION:** The study findings indicate the importance of perception of satisfaction regarding willingness to choose the department to refer to in the future and recommending the emergency department to others. The study emphasizes that physicians' care had the strongest correlation with the variables compared with other subscales.

T157) Monitoring patient satisfaction with the emergency department: a study from Iran : Sepideh Omidvari¹, Ali Azin², Ali Shahidzadeh Mahani², Farid Abolhasani³, Ali Montazeri¹, Hajieh Jaafari³, Fatemeh Hoseini³, Fatemeh Goodarzi⁴, Amir Mahmood Harirchi¹, Hamid Soori¹ : 1. Iranian Institute for Health Sciences Research, Mental Health Department, Tehran, Tehran, Iran. 2. Iranian Institute for Health Sciences Research, Social Medicine Department, Tehran, Tehran, Iran. 3. Tehran University of Medical Sciences, Tehran, Tehran, Iran. 4. Shahed University , Tehran, Tehran, Iran.

INTRODUCTION: Ongoing monitoring of patient satisfaction with the emergency department identifies areas of improvement needed to increase patients' satisfaction and promote quality care. The present study examines the results of the constant monitoring of

patients' satisfaction with emergency departments of three major teaching hospitals in Tehran, Iran from April, 2008 to April, 2009. **METHODS:** To measure patients' satisfaction with three general emergency departments, a study was conducted using a valid (from a prior qualitative study) and reliable ($\alpha=0.93$) questionnaire and purposive sampling ($n=670$). The questionnaire included 39 main variables related to 5 subscales, physicians' care, nursing care, behavioral aspects, physical comfort and hoteling, and being kept waiting. The researchers did not have any connection to the settings investigated. Patients who had been in the emergency department for at least 10 hours, who were able to answer the questions without a need for an interpreter, and did not have significant cognitive problems were included in the study. The study questionnaire was administered in confidential conditions. **RESULTS:** Concerning the 39 variables of the questionnaire the highest degrees of dissatisfaction, with and without considering participants' average views, were related to facilities for companions. The highest degree of patients' dissatisfaction, with or without considering participants' average views, concerning questions on physicians' care, was related to physicians' explanation about the disease and necessary measures, on nursing care, nurses' explanation about necessary measures, on behavioral aspects, investigating complaints, on physical comfort and hoteling, facilities for companion and last on being kept waiting, delay to be transferred to the other wards or to be discharged. The findings showed that concerning patients' general satisfaction with the hospital only 35% had reported it as good or very good. **CONCLUSION:** The present study reveals the need for improvement in different areas to promote quality care and increase the satisfaction of patients referring to the emergency department.

T158) Can we now change our policy of tetanus prophylaxis thanks to a bedside immunochromatographic test for the detection of anti-tetanus antibodies? : Jean Christophe Cavenaile¹, Judith Herrero Garcia¹ : 1. CHU-BRUGMANN , Brussels , Belgium.

INTRODUCTION: Tetanus prophylaxis based on the clinical history is not efficient because immunized patients receive boosters and tetanus immunoglobulin (TIG). Excessive administration of vaccines and immunoglobulin generates useless side effects and is very expensive. Tetanus Quick Stick™ (TQS)-a semi quantitative immunochromatographic test- is a good choice to evaluate the immune status of the patients and reduces the number of useless vaccinations.

Objectives: Evaluate within the frame of a cost-benefit study whether the systematic use of TQS is conceivable. **METHODS:** In this prospective monocentric study, 1700 patients with a sore were included; TQS was performed if the patients had not a written track-record of their immunity. Only 74 patients had a valid vaccination card (3.8 %); 1636 TQS were realized. Whenever TQS was positive the patient consequently received no tetanus prevention. If TQS was negative or doubtful the patients received tetanus prevention using WHO algorithm. We then compared the cost of tetanus prevention employing TQS against the cost of prevention using classical prevention. To obtain the costs for the anti-tetanus vaccination with the help of the TQS, we've aggregated the costs of the 1040 TQS with the costs to vaccinate the patients with a negative TQS. **RESULTS:** 1129 patients had a positive TQS and 567 patients had a negative TQS. The prevention of the non immunized patients needed 567 boosters and 247 TIG. Without TQS 1636 boosters and 714 TIG would have been done. Using TQS, tetanus

prevention has cost €18,526. Using the classical method the cost to prevent tetanus would have been €30,108. **CONCLUSION:** Systematic use of TQS is cost effective and avoids unnecessary and expensive treatments with harmful consequences. The test could systematically be included in the tetanus prevention algorithm.

T159) Can we now change our policy of tetanus prophylaxis thanks to a bedside immunochromatographic test for the detection of anti-tetanus antibodies ?

J.C Cavenaile M.D Judith Herrero Garcia M.D.1

Emergency Department1

CHU Brugmann (Université libre de Bruxelles) : Jean Christophe Cavenaile¹ : 1. CHU-BRUGMANN , Brussels , Belgium.

Background:

Tetanus prophylaxis based on the clinical history is not efficient because immunized patients receive boosters and tetanus immunoglobulin (TIG). Excessive administration of vaccines and immunoglobulin generates useless side effects and is very expensive. Tetanus Quick Stick™ (TQS)-a semi quantitative immunochromatographic test- is a good choice to evaluate the immune status of the patients and reduces the number of useless vaccinations.

Objectives :

Evaluate within the frame of a cost-benefit study whether the systematic use of TQS is conceivable.

Methods :

In this prospective monocentric study, 1700 patients with a sore were included; TQS was performed if the patients had not a written track-record of their immunity. Only 74 patients had a valid vaccination card (3.8 %); 1636 TQS were realized. Whenever TQS was positive the patient consequently received no tetanus prevention. If TQS was negative or doubtful the patients received tetanus prevention using WHO algorithm. We then compared the cost of tetanus prevention employing TQS against the cost of prevention using classical prevention. To obtain the costs for the anti-tetanus vaccination with the help of the TQS, we've aggregated the costs of the 1040 TQS with the costs to vaccinate the patients with a negative TQS.

Results : 1129 patients had a positive TQS and 567 patients had a negative TQS. The prevention of the non immunized patients needed 567 boosters and 247 TIG. Without TQS 1636 boosters and 714 TIG would have been done. Using TQS, tetanus prevention has cost € 18,526. Using the classical method the cost to prevent tetanus would have been €30,108.

Conclusion : Systematic use of TQS is cost effective and avoids unnecessary and expensive treatments with harmful consequences. The test could systematically be included in the tetanus prevention algorithm.

T160) The appropriate number of automated external defibrillator in a railroad station by the analysis and problems of the emergency transport service to railroad stations in Kobe city : Hiroyuki Nakao¹, Noboru Ishii¹, Takeshi Yoshida¹, Yuji Maeda², Yasunori Iwasaki³ : 1. Kobe University Hospital, Kobe City, Japan. 2. Kansai Medical University, Osaka, Japan. 3. Iwasaki Hospital, Kgawa, Japan.

INTRODUCTION: Large numbers of people converge in stations in urban areas, and among these people, there is a high probability that somebody may be injured or become sick. Kobe City has eight railway lines passing through it, with a total of 141 stations, and approximately 1,500 requests for emergency assistance are made from inside stations every year. In order to

raise the awareness of medical professionals and railway officials, I have investigated the incidence of sickness or injury and the provision of AEDs in stations. **METHODS:** Over three years, starting in 2004, I analyzed incidents of requests for emergency assistance made from inside stations in Kobe City and considered 1) the age distribution, 2) the numbers of incidents classified according to type of sickness or injury, 3) the times of incidence, 4) the provision of AEDs as of 2006, and 5) the incidence of CPA. **RESULTS:** Among the incidences of emergency transportation that occurred in the entire Kobe City area, 2,591 involved men (age: 50.8 ± 20.4 years) and 2,144 involved women (age: 41.0 ± 22.1 years). Among men, incidents of minor trauma and intoxication were common in the fifties and sixties age groups, and among women, incidents of psychiatric disorders were common in the twenties age group. The most common types of sickness or injury were, in order, minor trauma, psychiatric disorders, intoxication, gastrointestinal disorders, and mild respiratory disorders. **CONCLUSION:** I believe that incidents of minor trauma are common in Japanese railway stations because they have a complex structure that concentrates large numbers of people and that necessitates a large amount of vertical movement. Although the incidence of CPA in stations was low compared to that of special elderly nursing homes, a relatively high proportion were cardiogenic. In terminals where several stations converge, the areas inside the stations are large, and there are large numbers of passengers, and so it is necessary for multiple AEDs to be installed at various locations inside each station.

T161) IMPROVEMENT OF THE QUALITY OF CARE FOR BATTERED WOMEN IN THE EMERGENCY DEPARTMENT : M^a Teresa Martínez Izquierdo¹, Nuria León¹, Carlos Clemente¹, Isabel Campodarve¹, Elías Skaf¹, José Luis Echarte¹, Silvia Mínguez¹, María Jesús López¹ : 1. Emergency, Hospital del Mar, Barcelona, Catalonia, Spain.

INTRODUCTION: OBJECTIVES: To assess the frequency of presentation of battered women in the Emergency Department (ED), risk factors, detection by health care personnel and internal circuits in order to improve the quality of care for these women. **METHODS:** A prospective study of battered women attended in ED in 2004. Data were recorded on an anatomical map that included three pages. The original form was enclosed to the judicial note, a copy was included in the medical record, and the third was delivered to the social services. Frequent attendance was considered in the presence of a minimum of three annual visits. Data were analyzed with the SPSS vs 13.0 for Windows. **RESULTS:** 604 cases were collected. Age 34 (10) years. 40% were Spaniards. An anxious-depressive state was recorded in 59%. Violence occurred at home in 68% and in the presence of other people in 52%. 73% of women had suffered physical aggressions before and had not made any accusation. In 81% the aggressor was the current partner. Mild contusions were diagnosed in 93%. Cases were detected by health care personnel in 10%. 30% of women were frequent attenders. Most common reasons for consultation were non-specific conditions, gynecological, trauma, psychiatric, digestive, and neurological complaints. Risk factors for abuse were present in 53%, especially pregnancy, previous miscarriage, non-consenting sex, and increased violence. In 3% of cases, copies were not delivered to the IMAS social services. **CONCLUSIONS:** The high proportion of frequent attenders to ED and maltreatment-associated risk factors are main findings of the study as well as the low level of detection on the part of the health care personnel. The following measures to improve the quality of care

were adopted: 1) education of the health care personnel, including annual sessions to the new residents, and a continuing education course in the care of battered women addressed to IMAS personnel. 2) the anatomic map has been made available electronically, including the most frequent risk factors in our area of influence.

**T162) A YOUNG PATIENT WITH TUBERCULOUS CHRONIC CONSTRICTIVE PERICARDITIS :
Costantino Caroselli¹, Anna Belligoli¹, Francesco Manara¹ : 1. Dipartimento di Emergenza e Accettazione, Ospedale Civile Maggiore, Verona, Italy.**

BACKGROUND: We describe a clinical case of chronic constrictive pericarditis. **CASE:** A 43-year-old man presented to the Emergency Department with 1 month history of severe worsening dyspnea, anxiety and fatigue. He had no relevant medical history except a 6 month before report of fever, fatigue and chest pain self-limiting. He denied use of any medication. On admission, physical examination of the patient revealed jugular venous distension, distant heart sounds with arrhythmia and pulsus paradoxus. Blood pressure was 90/55 mmHg, the resting 12-lead

ECG showed atrial fibrillation at about 130 beats per minute. A chest radiogram (panel A) revealed considerable pericardial calcification. Severe chronic constrictive pericarditis was confirmed with high-resolution computed tomography of the chest and echocardiography. A diagnosis of tuberculous pericarditis was made by culturing *Mycobacterium tuberculosis* from pericardial biopsy. Pericardiectomy was found to be indicated but the patient refused.

DISCUSSION: Chronic constrictive pericarditis is a rare gradual inflammation of the pericardium occurring in several conditions. Pericardiectomy is necessary to prevent impairment of a cardiac tamponade. Left anterolateral thoracotomy and median sternotomy are the most frequently used approaches. Fatal bleeding caused by a tear in the right atrium or the venae cavae during surgery performed through a left anterolateral thoracotomy has been reported. The optimal time of pericardiectomy is most important in its management. Total or near-total pericardiectomy should always be performed as early as possible.



T163) Unexpected Reason for Hoarseness: Dental Prosthesis : Erkan Gunay¹, Deniz Oray¹, Ozge Duman Atilla¹, Adnan Bilge¹, Sehnaz Akin¹ : 1. Tepecik Research and Training Hospital, Izmir, Turkey.

BACKGROUND: Foreign bodies can be life-threatening. Adults usually present soon after ingestion or aspiration of a foreign body and are able to tell a history of the event. In a study of 200 patients, dental prostheses accounted for 11.5% of the cases. Dental foreign objects can be seen often during a dental procedure or among elderly after accidentally swallowing. Dental foreign bodies are well described in the dental literature but there are few case reports of dental upper airway obstruction in emergency medicine literature. **CASE:** A 66-year-old male presented to our Emergency Department (ED) after swallowing his own dental prosthesis, complaining of hoarseness and dyspnea. He couldn't speak and had no accompanying person to describe the event. He has used the dental prosthesis for over ten years and had no previous history of foreign bodies. He was tachycardic and hypoxic but not cyanotic. Oropharyngeal examination was normal. An airway X-ray study revealed the dental prosthesis in the upper airway. The dental prosthesis was removed by direct laryngoscopy in the ED by emergency physicians. After removal the patient's vital signs were normal and fiberoptic laryngoscopy performed by ear nose and throat surgeons showed no signs of laryngeal edema, bleeding or laceration. Follow up examination was normal and he was discharged with information for the signs and symptoms about upper airway injury. **DISCUSSION:** Size, shape and location of the foreign body dictate symptoms which can range from dysphonia to cyanosis and dyspnea. In adults, foreign bodies are typically pieces of food and, less commonly, dental prosthetics. Lodging at the laryngeal inlet or subglottic region can cause acute airway obstruction and urgent treatment is crucially important. Dental prostheses are one of the important but rare reasons for airway obstruction that are not easily removable and our case is a good example of the importance of early recognition and management of upper airway foreign bodies in the ED. **Conclusion:** Dental prosthetics should be considered as an upper airway foreign body especially in elderly.





T164) Button Battery as Nasal Foreign Body Extraction from the Nose: Three children cases report : Mehmet Dokur¹, Salih Tanrikulu¹, Mehmet Demir² : 1. Kilis State Hospital, Kilis, Turkey. 2. Kilis 7 Aralik University, Kilis, Turkey.

BACKGROUND: The widespread use of little electronic devices increased the use of small batteries as well, thus it facilitated their reach by the children too. Nasal foreign body symptoms are typically a unilateral nose occlusion and coryza. If those symptoms aren't remarked, they can remain quite a long time in the nose. Battery foreign body is a bit more different than others as it can cause alkali burns due to the release of the quicksilver it contains. **CASES:** In this case-series presentation, clinical presentations and emergency surgery approaches were applied to three female children respectively 4, 4 and 5 years old. In

this process, disc shaped batteries were extracted from their nose. These cases were submitted in guidance of literature. **DISCUSSION:** The clinical progress of children depends on varying factors, however, the common acceptance about button battery as a nasal foreign body is that there is the lethal potential and it requires an urgent extraction.

T165) Acute bronchitis and fever in a young man: a case of pulmonary embolism : Clara Girardi¹, Anna Maiolo¹, Federika Marino¹, Antonio Rizzo¹, Claudio Robecchi¹, Daniela Solenghi¹, Massimo Vota¹, Renato Daccò¹ : 1. emergency, ospedale san giuseppe, Milano, Italy.

CASE: A 26 yr old man was referred to our emergency department (ED) for an asthma attack. He presented a positive anamnesis for bronchial asthma, not other important pathologies; he wasn't a smoker, he hadn't familiarities with coagulation troubles and he didn't complain any thoracic pain or haemoptysis. In the ED, parameters were: BP 120/80 mmHg, HR 120 bpm and SaO₂ 99%, the pulmonary examination showed diffused signs of spasm without damp noises, nothing of notable at cardiac and abdominal examination, no signs of deep venous thrombosis in the lower limbs, the EKG showed sinus tachycardia in concomitance with fever. Blood samples showed increment of RCP (2,51 mg/dl), WBC 10030/uL and clear metabolic alkalosis on the haemogasanalysis (pH 7.59) with hypocapnia (26 mmHg). Nothing of relevant noted on the chest X-ray. In consideration of the haemogasanalysis a D-dimer was performed, and the results were remarkably altered (>1000 ng/dl). The patient was admitted to pneumology with pulmonary embolism suspected and started therapy with LMWH. The following morning a computerized tomography (CT) of the thorax showed little defect of filling in correspondence of peripheral ramification of pulmonary arteries of the upper right lobe and lower left basal lobe compatible with microembolism. The echocardiogram was normal. We also performed screening for coagulation deficit that was negative. After five days of therapy the CT scan was repeated and was normal, and patient was discharge on warfarin therapy for six months. **DISCUSSION:** Pulmonary embolism is pathology common enough and undervalued; about 50% of cases aren't diagnosed and in these cases the risk of death is very high. When the the clinical presentation is evasive it is useful to employ a diagnostic algorithm and calculate a score at the bedside such as a Geneva score and Wells score. The D-dimer is a laboratory test available and very useful in patients who have an unclear clinical situation. **Conclusion:** Pulmonary embolism is one of the most complex diagnoses in the ED, the testing of D-dimer and the use of diagnostic algorithms are suggested to diagnose the disease in the best possible way.

T166) Quick and silent : Daniela Rosillo Castro¹, Carlos Andres Andujar Tejada¹, Mihaela Vijulie¹, Maria Victoria Pérez López¹, Antonio Pérez Sanz¹ : 1. Hospital Universitario Reina Sofía de Murcia, Murcia, Murcia, Spain.

BACKGROUND: Haemoptysis is an important symptom since it frequently reflects serious underlying lung disease. The most common causes are pneumonia, tuberculosis, bronchitis, lung cancer, and pulmonary thromboembolism. **CASE:** A 39 year old male attended the emergency with cough, dyspnea and hemoptysis symptoms of 15 days duration with a progressive deterioration of his condition. The patient in the 15 days prior to admission had

refused to go to the doctor. Personal History: Former injecting drug addict. Current treatment: In methadone treatment for 7 years. Physical Test: TA: 127/75, HR 135, Temp: 35.8, SpO₂: 98%. AC: no pathological findings. AP: abolition of the vesicular murmur in the right lung. The rest of physical examination normal. Laboratory Analysis: Biochemistry: Normal. Blood: White blood cells: 18,000, neutrophils: 81.2%, Hb: 7.7, MCV: 83.1, HCM: 29.2 Platelets: 717.000. Urine: Normal.

Auramine Test: negative on two occasions. Rx chest: right massive pleural effusion. Investigations: DNA VIH: Negative. CT Chest: large tumor of pleural origin likely heterogeneous with aggressive and strong in their sector and fluid flow with mass effect, collapse of the right lung, mediastinal shift to the left and medialización of upper abdominal viscera. PAAF: positive for malignant cells. Cytological findings suggestive of large cell lung carcinoma/undifferentiated. DISCUSSION: In any young patient who comes to the emergency department with cough, dyspnea and hemoptysis should raise suspicion first of a lower respiratory tract infection. First of all patients with poor clinical outcome should be thinking about a disease and that complicates the process.

T168) Pneumomediastinum as a complication of acute severe asthma : Caitriona Mullarkey¹, Gabrielle O'Connor¹ : 1. Mid Western Regional Hospital, Limerick, Ireland.

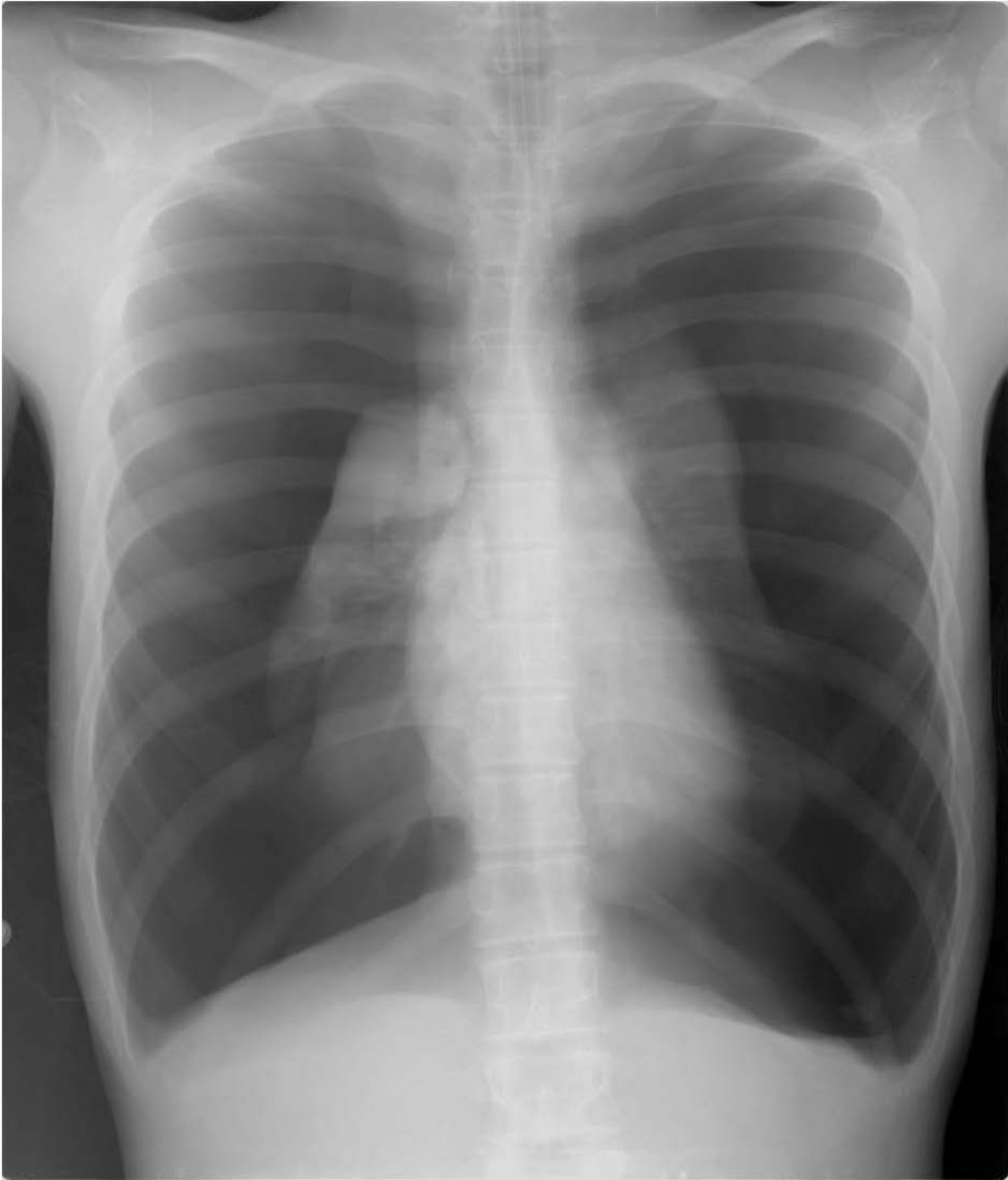
CASE: We report a case of a nineteen year old asthmatic who presented with an short history of breathlessness and right sided chest pain. A chest xray revealed the presence of a pneumomediastinum. His initial management included supplemental oxygen, nebulisers and analgesia and following hospital discharge he made an uneventful recovery.

DISCUSSION: We describe a review of the literature noting the rarity of this presentation, mechanism of occurrence and subtlety of clinical signs.

T170) A Case of Simultaneous Bilateral Primary Spontaneous Pneumothorax with Respiratory Failure : Euichung Kim¹, Chang Jae Lee¹, Ok Jun Kim¹, Sung Wook Choi¹ : 1. Emergency department, Bundang Cha Hospital, Seung Nam si, Gyeonggi-do, Korea, South.

BACKGROUND: Simultaneous bilateral spontaneous pneumothorax (SBSP) is a very rare condition, mainly seen in patients with underlying lung disease. If it progresses to tension pneumothorax, it can be life-threatening for the patient. CASE: We present a case of a 16-year-old male with no underlying lung disease who developed sudden onset dyspnea and chest pain. On the arrival to EMC, he was unconscious with full-dilated pupils and decreased lung sound in both lung field. Initial EKG showed PEA rhythm. CPR was initiated and chest X-ray was obtained. It showed the complete collapse of both lungs, suggestive of bilateral tension pneumothorax. Needle decompression was performed and he regained consciousness gradually. Chest tubes were inserted bilaterally. The oxygen saturation was good, over 95% with room air. CT scans were performed and showed multiple great subphrenic bullae at the apex of both lungs. Bilateral wedge resection and open bullectomy were performed 6 days later. He had a good prognosis and was discharged with Cerebral Performance Category 1 (Conscious. Alert and able to work and lead a normal life). DISCUSSION: SBSP needs

urgent assessment and management, and we should consider an early surgical approach.



T171) A New Marker For Asthma Severity? : Munawar Al-Mudhaffar¹, David Potts¹, G.

Thirumammanivannan¹, Simon Smith¹ : 1. Emergency Department, Wycombe Hospital, High Wycombe, United Kingdom.

INTRODUCTION: Asthma is a common cause of morbidity and mortality. The mere presence of asthma with other conditions (e.g. cardiovascular disease) has a six fold increased risk of death. Haematocrit is a recognised marker in medicine especially in dehydration. Many studies have revealed an association between asthma and dehydration. **Objective:** We propose that haematocrit can be used as a marker in asthma severity by mean of assessing the severity of dehydration. **METHODS:** We retrospectively studied the notes of 121 patients older than 16 years of age who presented to our emergency department over six month period with an acute asthma attack. **RESULTS:** Twenty four patients were admitted; all had their haematocrit measured (mean age of these patients: 39.4 years, 17 females, 7 males, duration of symptoms 51.9 hours). Of the 97 patients who were discharged from the emergency department; only 10 had their haematocrit measured (mean age 36.9 years, 8 females, 2 males, duration of symptoms 77 hours). Those who were admitted had more severe asthma than those discharged based on clinical features and Peak Expiratory Flow Rate (PEFR). Haematocrit level was found to be higher in the admitted patients (0.42) than in those discharged (0.41) but levels were not statistically significant ($p < 0.2$). However, the rise in haematocrit level did correlate in a negative way with the drop in peak expiratory flow rate but very weakly (correlation coefficient was -0.05348). **CONCLUSION:** Haematocrit may have a promising role in assessing severity of asthma, however, a larger number of patients is required to show more significant results.

T172) Profile of patients diagnosed with acute pulmonary edema (APE), treated with noninvasive ventilation (NIV) in the emergency department (ED), hospital mortality, failure rate and patient's destination : Jose M. Carratalá¹, Alejandro R. Albert¹, Benjamin Brouzet¹, Pere Llorens¹, Amadeo Almela² : 1. Urgencias / UCE, Hospital General de Alicante, Alicante, Alicante, Spain. 2. Hospital Arnau de Vilanova, Valencia, Valencia, Spain.

INTRODUCTION: APE is a frequent clinical problem treated in ED. NIV provides effective ventilatory assistance and does not require EI. NIV early assistance enables the patient with APE early control of dyspnea, gas exchange, reduction in EI requirement and a drop in mortality compared to conventional oxygenation. **OBJECTIVE:** Describe patients' profile with APE and treated with NIV, vital signs, gas exchange at the start and after 60m of NIV, ventilatory modes, patient's destination, need of EI and hospital mortality. **METHODS:** Observational study of 133 patients treated with NIV in an ED. Exclusion criteria: < 18 years, shock, myocardial infarction, ventricular arrhythmia, uncooperative and immediate need for EI. Inclusion criteria: bilateral rales, AHF on radiography, moderate-severe dyspnea, respiratory rate > 30 , use of accessory musculature, $PaO_2/FiO_2 < 300$, $PaCO_2 > 45$ mmHg. **RESULTS:** Mean age 76.2 years; 51.8% male; 56% Charlson[?]; 65.4% Barthell[?]. Most usual mode was CPAP; 81.3% had severe dyspnea and 3% after 60m of NIV; 93.2% were using accessory musculature and 11.2% after 60m. RR was 36.3 and 25.6 after 60m. PaO_2 was 67 mmHg and 87.3 mmHg after 60m, $PaCO_2$ decreased from 57 mmHg to 50 mmHg. pH was 7.26 and 7.35 after 60m. NIV failed in 7.5%; 3.7% required EI; 3% died in ED; 12% died

during admission; 33.8% treated in the short stay unit, only 5.2% in ICU. CONCLUSIONS: Patients with APE are usually fragile old men, with high morbidity. Patients benefit from early use of NIV that contributes to an early improvement of clinical and gasometric parameters, reducing the number of EI and admissions in ICU. The most used method was CPAP, complications were unusual with only 7% of failed cases. Admissions in the ICU was 5.2%, short-stay unit was the most frequent destination. Hospital mortality rate was similar to prior studies. We strongly recommend early use of NIV, particularly CPAP mode, because of its simplicity and low complication rate. BIPAP mode should be applied in patients with extreme dyspnea and hypercapnia.

T173) Assessment of non-invasive mechanical ventilation at the casualty department of the Empordà Health Foundation in the year 2008 : Anna Puchades¹, Manel Ojeda¹, Lourdes Caussa², Olalla Gonzalez¹, Cristina Montero¹ : 1. Fundació Salut Empordà, Figueres, Spain. 2. Centre d'Atenció Primària de Roses, Roses, Spain.

INTRODUCTION: Non-invasive mechanical ventilation (NIMV) is supported by a number of studies and consensus documents on early-stage acute respiratory failure, both with hypoxaemia and with hypercapnia. There is also a better relationship between cost and profit because the number of admissions to ICU and co-morbidities decreases. The aim of this study is to describe welfare practices with the NIMV modality Bipap at the casualty department of the Empordà Health Foundation, during the period of the year 2008. METHODS: Reviewing clinical cases through an existing register of the different sessions carried out from the 1st January to the 31st December 2008. The reviewed and collected parameters when starting and finishing the session were: respiratory frequency, cardiac frequency, blood pressure, pH, PO₂, PCO₂, CO₃H, SPO₂, L/V, IPAP, EPAP, leaks, V/minute. Other parameters: gender, age, duration of session, duration of break, time needed by nurses to apply the NIMV, medical diagnosis and missing information in the register. These data have been compiled with the software Excel and treated with SPSSv15. RESULTS: During 2008 in our casualty department we carried out 14 sessions with NIMV, but in two of those cases the relevant data could not be collected. 66.7% were men and 33.3% women, with an average age of 75 years, a respiratory frequency of 30x', a blood pH of 7.28, an oxygen pressure of 62.67 mmHg, a carbon dioxide pressure of 84.58 mmHg. The average time per session was 27.03 hours. The average break time was 6.12 hours. The average time needed by nurses was 15 minutes but it must be considered that this parameter was not filled out in 75% of the sessions. After the treatment we obtain a respiratory frequency of 26.55, a pH of 7.42, a PO₂ of 61.58 mmHg, a PCO₂ of 59.75 mmHg, and a saturation of 89.67%. CONCLUSIONS: The results obtained show an improvement in pH, PCO₂ and saturation, without a significant variation regarding PO₂. We are missing a register of the possible injuries caused by the mask and it is important to insist on the correct filling-out of the register.

T175) CROSS-SECTIONAL STUDY OF THE CHARACTERISTICS OF PATIENTS WITH PULMONARY THROMBOEMBOLISM ADMITTED AT THE EMERGENCY DEPARTMENT : Eunate Arana-Arri¹, Natalia Lekerika-Royo¹, Lorena López-Roldán¹, Larraitz García-Echeberria¹, Ana García-Montero¹, Maider Garmendia-Zallo¹, Valentin Cabriada-Nuño², Ainhoa Gómez-Bonilla² : 1. Emergency Department, Cruces Hospital, Barakaldo, Bizkaia, Spain. 2. Neumology Department, Cruces Hospital, Barakaldo, Bizkaia, Spain.

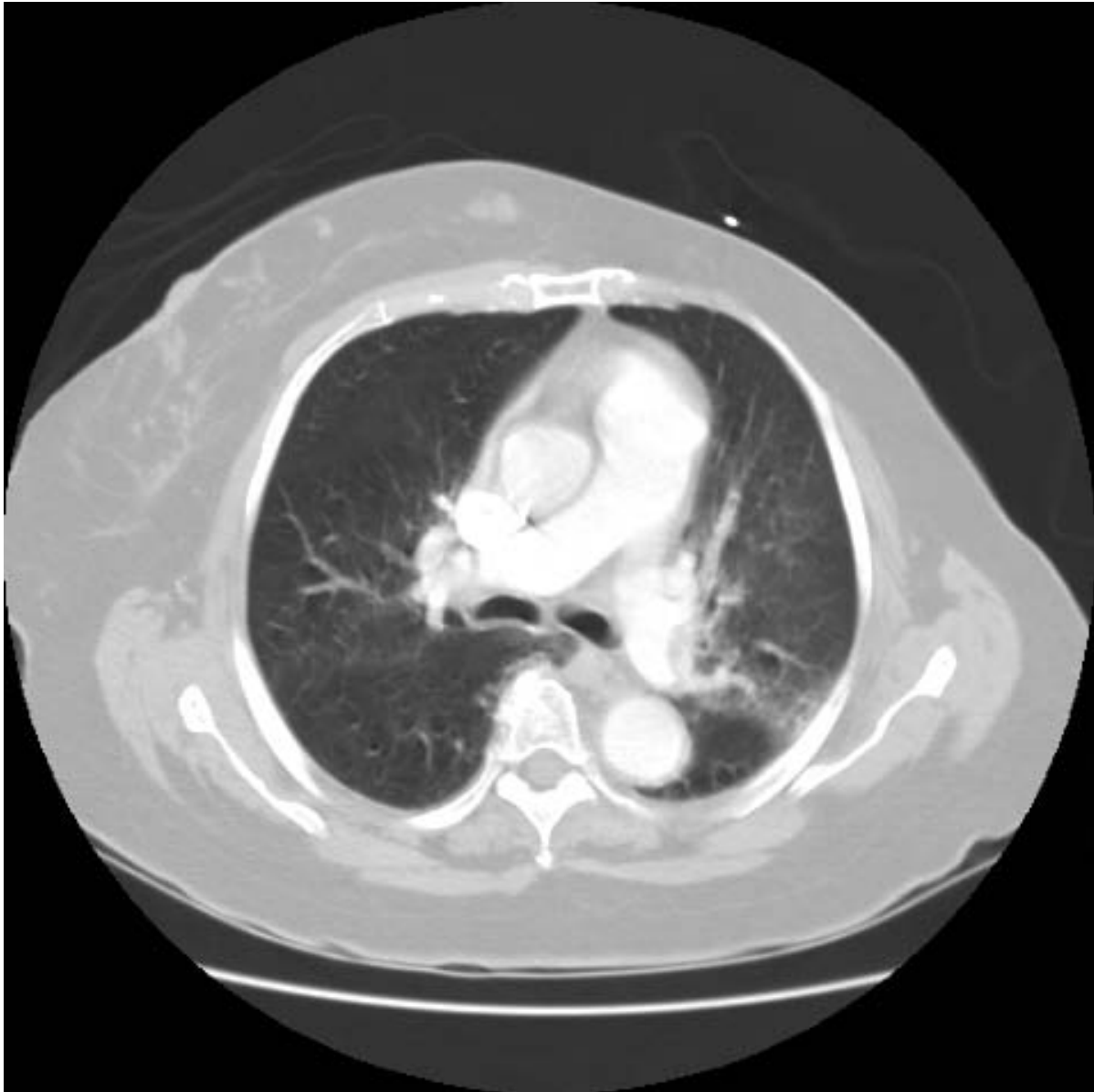
INTRODUCTION: Our aims were to analyze the epidemiological profile, clinical characteristics, morbidity and mortality and frequency of hospital admission of patients admitted to the emergency department with pulmonary thromboembolism (PE). **METHODS:** Cross-sectional study of the Emergency Hospital Setting (EHS) visits by patients older than 14 years, attended during two months at the emergency department. The data were recorded and analysed from the clinical data sheet and patient clinical records. **RESULTS:** 130 patients were admitted to the emergency department in the study period with suspicion of pulmonary thromboembolism, 22 patients were finally diagnosed (16.9%). 19 patients consulted again at the EHS, and 1 patient was diagnosed with PE. The mean age of the patients with PE was 68.8 years (range: 28-88 years). 59.1% were male. The main co-morbidity risk factors were: hypertension (50%), active neoplasia (22.7%), diabetes mellitus (18.2%) and atrial-fibrillation (18.2%). 4.5% had a previous pulmonary thromboembolism. None of the patients had been on anticoagulant treatment and 9.1% were treated with ASA. The main reason for consultation was progressive dyspnoea (46.2%), followed by chest pain (19.5%), sudden dyspnoea (15.4%) and syncope (10%). Analyzing vital signs at admission, 2 patients presented hypotension, 13 tachycardia and 6 respiratory failures. The mean value of D-dimer was 2,868.6 ng/mL (range: 644-11,560). 36.4% of patients were also diagnosed with a deep venous thrombosis. All patients were admitted at the hospital and 3 of them in the Intensive Care Unit. The mean stay at the hospital was 7.7 days and the mean duration of the stay at the Intensive Care Unit 3.3 days. The mortality rate was 4.5% (1 patient). **CONCLUSIONS:** PE is a typical cause of admission to an EHS and it is normally solved without major complications. In any case, to know the characteristics of the patients admitted could help in the improvement of the patients' diagnosis and treatment and reducing unnecessary readmissions that could complicate the prognosis.

T176) Pulmonary Emboli Causing Chest Pain : Lisa Moreno-Walton¹, Mary T. Ryan² : 1. Emergency Medicine, Louisiana State University Health Sciences Center, New Orleans, LA, USA. 2. Lincoln Medical and Mental Health Center, Bronx, NY, USA.

CASE: Chief Complaint: Shortness of breath and chest pain. HPI: 82 yo female with two weeks of chest pain and shortness of breath, worsening over the past three days. PMH: hypertension, myocardial infarction, osteoarthritis, breast cancer. Exam: T 97.1F, Bp 149/101, HR 106, RR22, pulse ox 88% on room air. A left mastectomy scar is noted. Auscultation of lungs revealed decreased breath sounds throughout. Heart sounds: S1, S2 without murmurs gallops or rubs. Abdomen benign. Ext: no edema. Lab: White count of 16.7, ABG 7.42/30/46/83%, D-dimer greater than one. Imaging: Chest xray normal. EKG no change from prior. Chest CT was ordered. Diagnosis: Bilateral pulmonary emboli. **DISCUSSION:** Pulmonary embolus results from thrombus in one of the deep veins which migrates to the right heart and subsequently occludes the vessels of the arterial circulation of the lungs. PE is the third most common cause of death in the U.S. and must always be considered in patients with history of DVT or PE, malignancy, chemotherapy, obesity, estrogen therapy, immobility, recent trauma or hypercoagulable states. The patient should be started on heparin infusion, given supplementary oxygen and admitted. Take Home Points: 1.

Always consider PE in patients with dyspnea, chest pain or tachycardia. 2. Search for occult malignancy in patients with documented PE. 3. Risk factors are based on Virchow's triad: venostasis, hypercoaguability, and vessel wall abnormality.

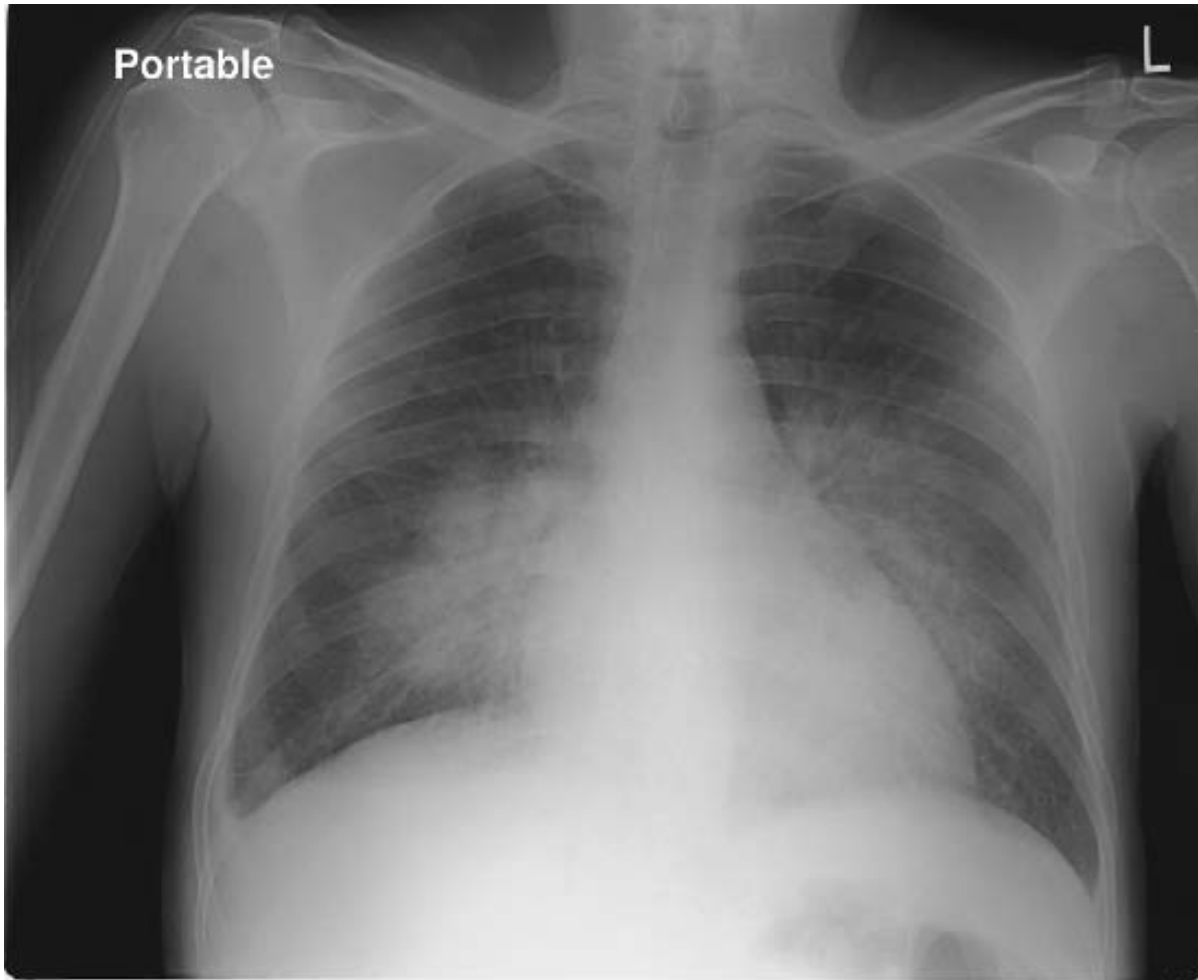




T177) Angel's Wings: A Case of Pulmonary Edema : Lisa Moreno-Walton¹, Micelle Haydel¹ : 1. Emergency Medicine, Louisiana State University Health Sciences Center, New Orleans, LA, USA.

CASE: Chief Complaint: "I can't breathe!" History: 67 year old male with a history of poorly controlled HTN, adult onset DM well controlled by oral agents, who was brought into the ED by ambulance after three days of DOE which rapidly worsened to severe SOB over three hours this morning. Physical Exam: Thin male on non-rebreather with obvious respiratory

distress, using accessory muscles with nasal flaring and diaphoresis. Vital signs: Bp 158/92, HR 98, RR 24, Afebrile, pulse ox 94%. HEENT: membranes dry; mouth open for breathing. Neck:trachea midline; unable to assess JVD as patient cannot lie back. Lungs: Rales present bilaterally from bases to apexes. Cor: S1, S2, S3 gallop. Ext:1+ pitting pre-tibial edema. Lab: Chemistry and CBC wnl. Imaging:stat CXR was obtained and is shown on the poster. Diagnosis: Acute Pulmonary Edema. DISCUSSION: The xray finding is pathoneumonic of this condition, and is called "angel wings" or "bat wings". The mnemonic "L-M-N-O-P" (from the alphabet song) tells us how to treat acute pulmonary edema."L" is for Lasix, "M" for morphine,"N" for nitrates,"O" for oxygen, and "P" for position and pulmonary toilet. Lasix should be given intravenously. If the patient has not had Lasix before, a starting dose of 60 mg is adequate. If the patient has been previously treated with Lasix, start with at least 80 mg. If the patient is on daily Lasix, begin with 20 mg more than his usual oral dose. Morphine can be used if the patient is excessively anxious and has increased tachypnea. Nitrates should be applied as paste to the patient's chest or can be given as a drip, titrated to result while observing for the side effect of hypotension. Oxygen is administered supplementally. Position the patient sitting upright and not slumped to his side, and perform pulmonary toilet. Take Home Points: 1. As with most pathoneumonic findings, this one is rarely seen, but when present is virtually conclusive diagnosis of the condition it represents. 2. Intubation can often be avoided with the appropriate use of oxygen and nitrates. 3. Do not underestimate the benefits of clapping the patient's back to bring up sputum and debris.



T178) Bilateral Pneumothorax, Subcutaneous Emphysema, Pneumomediastinum, and Pneumoperitoneum, after Colonoscopy: A Case Report : Najib Y. Nasrallah¹, Borris Boruck² : 1. Baruch Padeh Hospital Poria , Tiberias Lower Galilee, 15208, Israel. 2. Emergency Room department , Tiberias Lower Galilee, 15208, Israel.

BACKGROUND: Colonic perforation is potentially the most serious complication of colonoscopy. Both the clinical manifestation and rapidity of onset of symptoms can vary depending on whether the perforation occurs directly into the peritoneal cavity or into the retroperitoneal space. Colonic perforation is often associated with abdominal pain, although more uncommon presentations have been documented. The presence of subcutaneous emphysema, pneumomediastinum, pneumothorax and pneumoperitoneum simultaneously is a rare complication of colonoscopy that usually indicates free perforation to the peritoneal cavity or the retroperitoneal space. **CASE:** A case report of a bilateral pneumothorax,

pneumomediastinum, pneumopertoneum and severe subcutaneous emphysema of the face, neck, chest and abdomen complicating colonoscopy is described. The patient responded well to conservative measures and prophylactic antibiotic therapy without recourse to surgical intervention or parenteral alimentation. **DISCUSSION:** All endoscopists and emergency physicians must be aware of the possible association between acute respiratory failure in the peri-colonoscopy setting and colonic perforation.

T179) Psoas Abscess Presenting as Pulmonary Embolism : Muhammad A. Majeed¹, Ashes Mukherjee¹, Ian Dukes¹ : 1. ED, nhs, Dudley, United Kingdom.

CASE: A young 45 yrs old male presented to ED with a week history of left leg pain and shortness of breath. On the day of admission he had pain in his leg and worsening SOB. with no significant medical history. On presentation to ED he was tachycardia at 127/min, blood pressure of 138/102, afebrile, respiratory rate of 32/min with saturation of 92% on air. Physical examination was unremarkable except shortness of breath, left leg swelling and left renal angle tenderness. He was thought to have DVT leading to PE and pyelonephritis. Initial treatment was started with clexane and antibiotics. About 2 hours later the patient became more agitated and restless and unable to lie back due to the back pain. His arterial blood gases showed mild hypoxia with a normal lactate. Blood results revealed D-Dimer of 629, white cell count of 34,000 and neutrophils of 30,000, CRP 456, deranged LFTS and urea of 17.8 and creatinine 157. ECG showed sinus tachycardia and urine showed proteins, blood and leucocytes. Chest xray was unremarkable. We decided to arrange a CT abdomen and pelvis which showed a massive psoas muscle swelling (abscess), pyelonephritis and iliac vein thrombosis. He was started on intravenous antibiotics, clexane and had MRI done a month later which further confirmed the diagnosis, and had CT guided drainage done. The patient was discharged home after 2 months and followed up a month later and was doing fine. **DISCUSSION:** Psoas abscess is a rare condition that can be extremely difficult to diagnose. This frequently leads to a delay in making the diagnosis and consequently a prolonged hospital stay and an increased morbidity rate. The typical triad of fever, flank pain, and limitation of hip movement is present in only 30% of cases. Treatment of psoas abscess involves the use of appropriate antibiotics as well as drainage of the abscess. Drainage may be percutaneous or surgical. CT-guided drainage has been proven to be both effective and minimally invasive in dealing with this condition **Learning point:** Sometimes common things can have uncommon causes as in our case of pulmonary embolism caused by psoas abscess.

T180) Pediatric ENT Emergencies in a University Hospital : Bahar Öztelcan¹, Sabiha Sahin¹, Nejat Akgun¹ : 1. Eskisehir Osmangazi University Paediatric Department, Eskisehir, Turkey.

INTRODUCTION: Pediatric Emergency Ear, Nose and Throat (ENT) diseases are common in all emergency departments. Early diagnosis and appropriate management can decrease morbidity and mortality rates. **METHODS:** During one year period, 1st Jan 2008-31st Dec 2008, in a pediatric emergency department (ED), 1468 patients who were recorded with the diagnosis of a pediatric ENT emergency disease were evaluated retrospectively. The season,

age, sex, mortality rates were included in this study. RESULTS: A total of 1468 patients of which 803 males (54.7%) and 665 females (45.3%), were admitted for emergency care. The age interval was 1 month to 17 years; mean age was 6.09 years. The most common causes of emergency admissions were tonsillitis in 664 (45.2%), upper respiratory tract infections (URTI) in 230 (15.7%) patients, otitis media in 229 (15.6%), foreign bodies (in the oesophagus, ear and nose) in 58 (4%) patients, epistaxis in 45 (3.1 %) patients. Other causes of ENT emergency admissions were maxillofacial traumas (5.6%), croup (2.4%), epiglottitis (0.1%), retropharyngeal abscess (0.1%), otitis externa (3.5%), acute sinusitis (4.8%) and peritonsillar abscess in (0.2%). Otitis media, tonsillitis, URTI infections, croup, and epiglottitis occurred in all age groups, but they were observed more commonly in cases aged 6 months to 3 years, in males (53.3%) and in winter. Foreign bodies were determined in 41 (70.7%) patients who were male and under 3 years. 50.1% of patients were admitted in winter, the majority of these cases were diagnosed with sinusitis, otitis media, croup and URTI. Otitis externa was diagnosed more commonly in spring and summer. Peritonsillar abscess, retropharyngeal abscess and maxillofacial traumas were evaluated together with pediatric surgeons, ENT surgeons and neurosurgeons. Mortality rate was 0%. CONCLUSION: More than 90% of patients who are admitted to the ED with pediatric emergency ENT disease may be successfully treated by a pediatric emergency physician. Training for management of pediatric ENT diseases is significant in order to prevent unnecessary hospitalizations.

T181) Pulmonary thromboembolism in the emergency department: Clinical findings are changing : María Teresa Martínez¹, Oriol Pallas¹, Isabel Campodarve¹, Francisco Del Baño¹, Silvia Minguez¹, August Supervia¹, Alfons Aguirre¹, Jose Luis Echarte¹ : 1. Hospital del Mar, Barcelona, Catalunya, Spain.

INTRODUCTION: Clinical features and diagnostic studies have a low specificity in pulmonary thromboembolism (PT). Some data traditionally considered as suggestive of PT are infrequent. The introduction of computerized chest angiotomography (TC) in recent years, allow us to perform a reliable diagnostic test. OBJECTIVE: To assess clinical manifestations, EKG, radiographic and laboratory data of patients with PT attended in the emergency department (ED)

METHODS: Medical records of all patients with a diagnosis of PT admitted to the ED in 2005 and 2006 were reviewed. Data were analyzed with SPSS v.13.0. RESULTS: PT diagnosis was confirmed in 55 patients. Mean age 69 ± 16 y. Women were 67%. The following data were recorded: smoking 14.5%, obesity 24%, thrombophilia 14.5%, respiratory diseases 33%, heart diseases 24%, hypertension 67%, history of PT or deep venous thrombosis (DVT) 18%, previous neoplasm 14.5%, previous surgery 5.5%, immobilization 42%, dyspnea 87%, chest pain 34.5%, and syncope 20%. None of the patients had hemoptysis. Mean systolic BP was 132 ± 25 mmHg. Signs of DVT in 31%. Venous insufficiency in 24%, tachypnea in 75%, tachycardia in 61%, S1Q3T3 in 20%, right bundle block in 18%, negative precordial T-waves in 18%, atrial fibrillation in 6%, elevated hemidiaphragm in 24%, basal atelectasis in 3.6%, and pleural effusion in 18%. Laboratory data: PaO₂>60 mmHg 35%, PaCO₂>35 mmHg 52%, PaO₂/FiO₂ > 250 in 33%, high D-dimer levels in 82% and T troponin>0.01 in 67%. In the TC, involvement of central vessels was found in 60%, whereas in 56.4% bilateral and multiple vessel involvement was observed.

CONCLUSIONS: Patients attended in our ED with a diagnosis of PT seems to show different characteristics as compared with previous clinical series. Outstanding findings included absence of hemoptysis, a lower percentage of patients with chest pain and atrial fibrillation, and high frequency of hypertension and elevated T troponin levels. The extensive vascular involvement in the TC and the fact that D-dimer was negative in 20% of patients were also relevant findings.

T182) CHARACTERISTICS OF PATIENTS ADMITTED DUE TO COPD EXACERBATION : Esther Pulido¹, Marisol Gallardo¹, Jone Amigo¹, Amaia Martínez¹, Kalliopi Vrotsou¹, Susana Garcia Gutierrez¹ : 1. Research Unit, Hospital Galdakao-Usansolo, Usansolo, Vizcaya, Spain.

INTRODUCTION: Our main goal is to explore which variables are influencing decision of admission in COPD exacerbations. **METHODS:** Prospective cohort study. We included 218 patients who attended the emergency department of Hospital Galdakao-Usansolo with a main diagnosis of COPD exacerbation. Sociodemographic and clinical variables (basal COPD, chronic oxygen therapy, previous treatments for current exacerbation, dyspnea at the arrival to the ED and at the time of decision, comorbidities, number of admissions in the previous year, and severity of the current exacerbation) were collected. Characteristics of the patients admitted and discharged from the hospital were compared by means of a Chi-square test in the case of categorical variables and t-test in the case of continuous ones. A logistic regression model (exact conditional analysis) was created, with dependent variable being the probability of admission yes/no and independent variables severity of exacerbation, sex, age, comorbidities and number of admissions in the previous year. **RESULTS:** The univariate analysis suggested statistically significant differences in the severity of exacerbation ($p=0.0003$), presence of diabetes mellitus ($p=0.029$) and dyspnea at the arrival in ED ($p=0.003$) between admitted and not admitted patients. Presenting a severe-very severe exacerbation was the single most significant variable that explained the admission in the hospital (OR=12 CI 95% I: 1.94 - , $p=0.0035$) in the multivariate model. **CONCLUSION:** Severity of the exacerbation was the most influential variable in the decision of admission. An increase of sample size could detect other influencing variables in the decision of admission.

T183) Scale to assess severity of COPD exacerbation : Susana Garcia Gutierrez¹, Esther Pulido¹, Cristobal Esteban¹, Nerea Fernández de Larrea⁴, Marisa Baré⁵, Silvia Vidal³, José María Quintana¹, Amaia Bilbao², Iryss-Copd Group¹ : 1. Research Unit, Hospital Galdakao-Usansolo, Usansolo, Vizcaya, Spain. 2. Fundación Vasca de innovación e investigaciones Sanitarias (BIOEF), Sondika, Spain. 3. Hospital Valme, Sevilla, Spain. 4. Agencia Laín Entralgo, Madrid, Spain. 5. Corporación Parc Taulí, Sabadell, Spain.

INTRODUCTION: Our main goal was to create, and validate a scale to assess COPD exacerbations that may help emergency physician in their decision making process. **METHODS:** Variables included in the severity scale were combined in an easy to use scale based on: pH, consciousness level, hemodynamic stability, respiratory rate, gasometrical parameters (pH, PCO₂/sat O₂, PO₂) measured at the time the decision of discharge to home

or admit to the hospital was done at the ER. Validation: Prospective cohort study: 951 patients attending emergency department of six participating hospitals, whose main diagnosis was COPD exacerbation were recruited for the study. Clinical signs and gasometrical parameters at the time of the decision were collected as well as data about outcomes related to the exacerbation during admission or in the week after emergency visit if the patient was discharged. The presence of intensive care unit admission, invasive or non-invasive mechanical ventilation necessity, cardiac arrest and/or death) was considered “poor evolution”. Statistical analysis: We explored the influence of each the variable which composed the severity scale in composite end-point variable “poor evolution” as well as the discriminate validity of the scale by means of the Chi-square test. RESULTS: Statistically significant differences were encountered between those who presented poor evolution and those who didn't, in all the variables that composed the scale, except for hemodynamic stability. On the other hand statistically significant differences were found in percentages of patients who presented poor evolution among categories of severity (3.6% mild, 8.2% moderate, 20.4% severe-very severe) ($p < 0.0001$). CONCLUSION: Our scale was able to detect patients who were more likely to have poor outcomes after a COPD exacerbation in this pilot study. We are hopeful to show an increase in the discriminate validity of the tool with a larger sample size, and it will be helpful to emergency physicians in their daily practice.

T184) Uncommon complication of spontaneous pneumomediastinum in a young child : Kisang Roh¹, Seokyong Ryu¹, Sangrae Lee¹, Sukjin Cho¹, Sungchan Oh¹ : 1. Emergency, Sanggye Paik Hospital, Seoul, Korea, South.

BACKGROUND: Spontaneous pneumomediastinum (SPM) is a rare condition seen mainly in older children and adolescents. It is a benign condition that generally resolves without sequelae. We report a severe case with rare complications of spontaneous pneumomediastinum (“malignant SPM”) in a child without any underlying disease. **CASE:** A 12-year-old boy was referred to the emergency department (ED) by his primary care physician. He presented with 2-day history of cough, sore throat, febrile sense, left chest discomfort and dyspnea. There was no history of asthma or injury to the chest. On examination, the vital signs were blood pressure of 161/97mmHg, heart rate of 148 per minute, respiratory rate of 24 per minute, temperature of 37.0 centigrade. Oxygen saturation of 60% on room air by pulse oximeter. Palpation of his neck, chest and both arm revealed crepitus, indicating the presence of subcutaneous emphysema. Initial arterial blood gas analysis (ABGA) was pH 7.224, pCO₂ 68.5, pO₂ 41.8, HCO₃ 27.7, SaO₂ 66.5. Immediately oxygen was supplied by O₂ 10L/min and SaO₂ was improved at 89%. But his dyspnea and chest discomfort were not relieved. After one hour the follow up ABGA; pH 7.216, pCO₂ 71.8, pO₂ 67.0, HCO₃ 28.5, SaO₂ 88.6 and he had become progressively drowsy. At once he was intubated and a chest CT was obtained. The CT demonstrated extensive pneumomediastinum, pneumopericardium, left pneumoretroperitoneum, air bubble in the spinal canal, small amount of left pleural effusion and non-visualization of LUL bronchus with collapse (Fig. 1). Clinically, he was admitted to the cardiothoracic surgery department at ICU for close observation. Left thoracostomy was performed immediately 3 hours after the ED visit and ventilator care was started (Fig. 2). Chest tube removal was done on the fourth

hospital day and he was discharged home on the sixth hospital day. He developed no further complications during his hospitalisation. **DISCUSSION:** Simultaneous occurrence of subcutaneous emphysema, pneumothorax, pneumopericardium, pneumoretroperitoneum and epidural emphysema associated with SPM is extremely rare. Moreover, in our case it was life-threatening.



Figure 1. Composite CT coronal plane of thorax showing pneumomediastinum, pneumothoraces, pneumopericardium, left pneumoperitoneum, subcutaneous emphysema and non-visualization of LUL bronchus with collapse



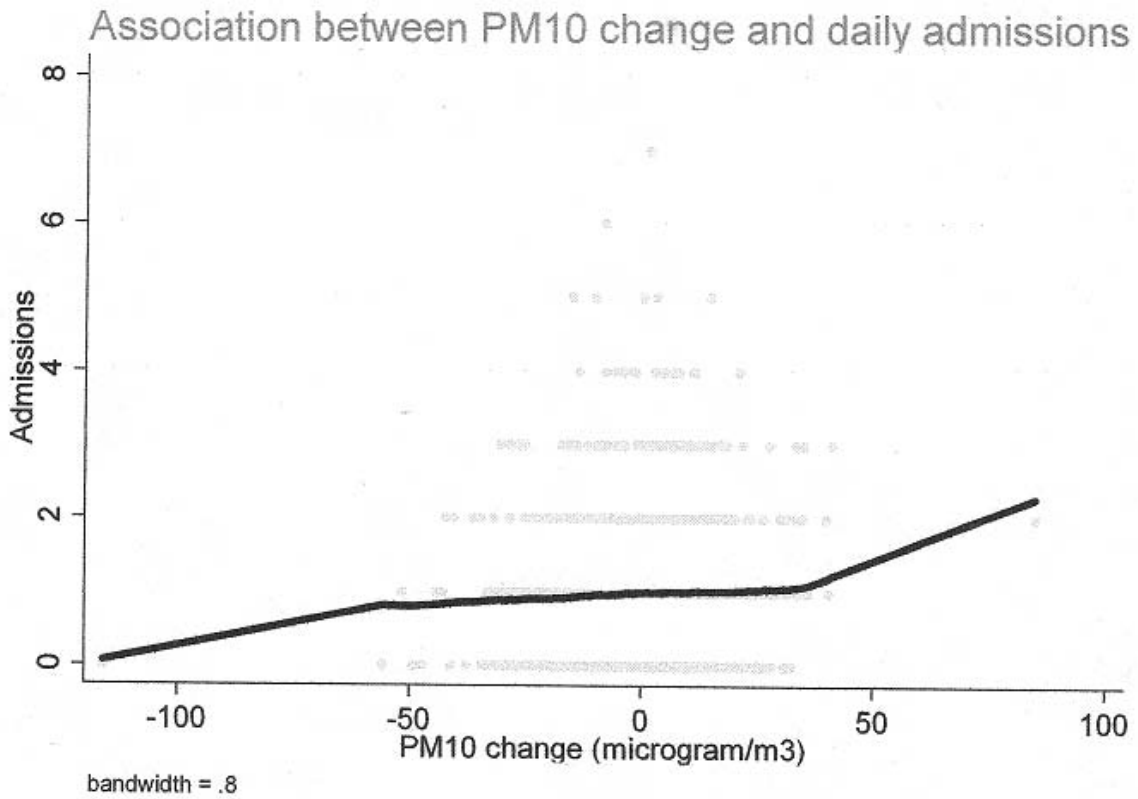
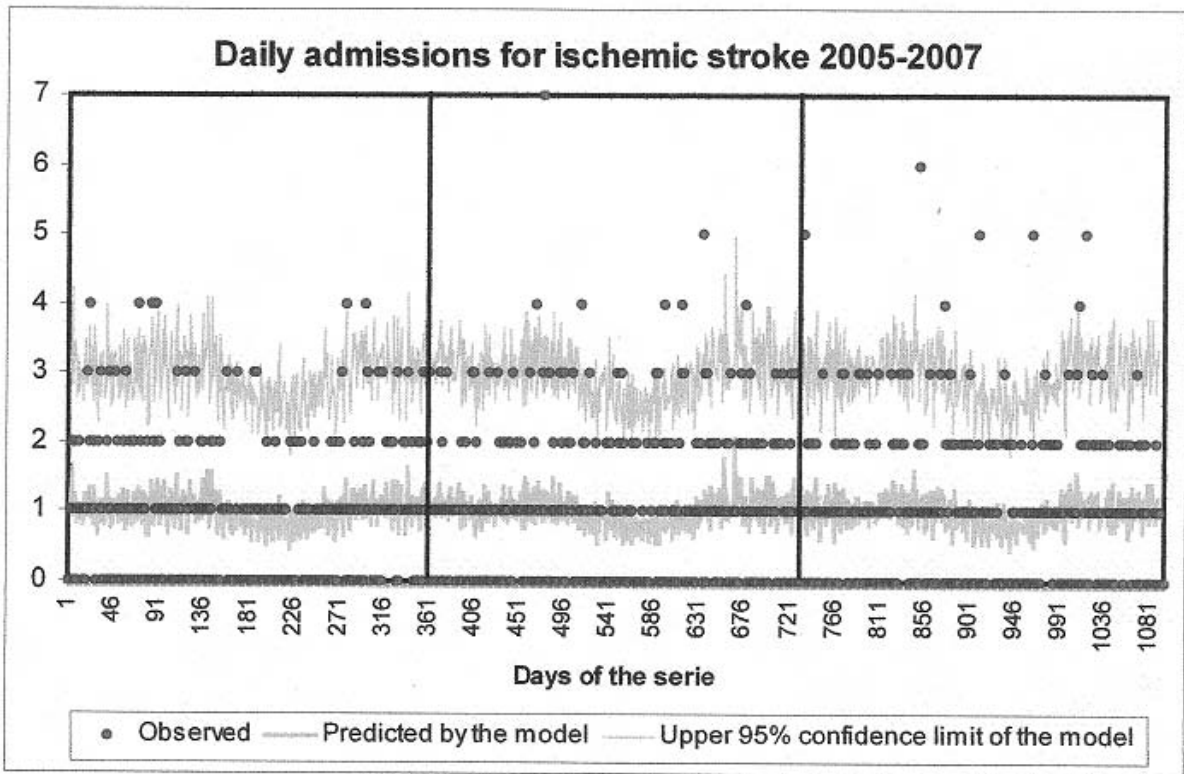
Figure 2. Chest PA 3 Hours after the emergency department visit

T185) Intravenous Ketamine in a Dissociating Dose as a Temporizing Measure to Avoid Mechanical Ventilation in an Adult Patient with Severe Asthma Exacerbation : Gil Shlamovitz¹, Tracy Hawthorne¹ : 1. Emergency Medicine, Windham Community Memorial Hospital, Willimantic, CT, USA.

BACKGROUND: Patients experiencing severe asthma exacerbations occasionally deteriorate to respiratory failure requiring endotracheal intubation and mechanical ventilation. Mechanical ventilation in this setting exposes the patients to substantial iatrogenic risk and should be avoided if at all possible. Objectives: To describe the use of intravenous ketamine in acute asthma exacerbation. CASE: We present a case of severe asthma exacerbation in an adult female patient who failed to improve with standard therapies, but promptly improved with the administration of intravenous ketamine (0.75 mg/kg i.v. bolus followed by continuous drip of 0.15 mg/kg/h). DISCUSSION: This case suggests that intravenous ketamine given in a dissociative dose may be an effective temporizing measure to avoid mechanical ventilation in adult patients with severe asthma exacerbations.

T186) Weather, air pollution, and hospital emergency admissions for ischemic stroke : Antonio Valdivia¹, Carmen del Arco¹, Guillermo Fernández¹, Marta Ruiz¹, Cristina Sanz¹, Myrian Pichiule¹ : 1. Hospital Universitario de La Princesa, Madrid, Madrid, Spain.

INTRODUCTION: There is a well-documented association between the increase of cardiovascular morbidity and mortality and weather changes as well as the short-term effects of particulate matter. This may be related to the acute systemic inflammatory response, changes in hemostatic factors and relative sympathoexcitation, so particulate matter may increase the risk for stroke. We analyse the relation between weather, air pollution, and emergency admissions for ischemic stroke (IS). **METHODS:** Time series analysis of daily admissions for IS (ICD-9, codes 433 and 434) in the emergency department of a third level hospital over the period 2005-2007. We evaluated the association with daily outdoor humidity, temperature, wind speed, atmospheric pressure, particulate matter of less than 10 μ m of aerodynamic diameter (PM10), nitric dioxide, sulphur dioxide and carbon monoxide, as well as their daily change compared to the day before admission. After a bivariate analysis, we performed a multivariate Poisson model for each pollutant with adjustment for holidays, day of the week and weather covariates. **RESULTS:** There were 1,082 admissions for IS, 50.7% were women. The median age was 78 years. There were significantly less admissions in July and August: risk ratio (RR) 0.73 (95% CI, 0.56-0.96). We found a significant rise of admissions on Tuesday (RR 1.29, 95% CI 1.03-1.60) and a slight fall on Sunday (RR 0.84, 95% CI 0.66-1.09). The only weather variable independently associated to daily admissions was the relative humidity change: 0.8% more risk for each 1% fall on the same day of admission (RR 1.01, 95% CI 1.00-1.01). The only pollutant variable was the PM10 change: 5% more risk for each 10 μ g/m³ rise (RR 1.05, 95% CI 1.00-1.10). No independent association was observed with any other weather or pollutant variable 0 to 2 days before admission. **CONCLUSION:** These results suggest that falls in relative humidity and elevations in ambient particles may transiently increase the risk for ischemic stroke. Our findings about PM10 are concordant with recent studies about cerebrovascular risk factors.

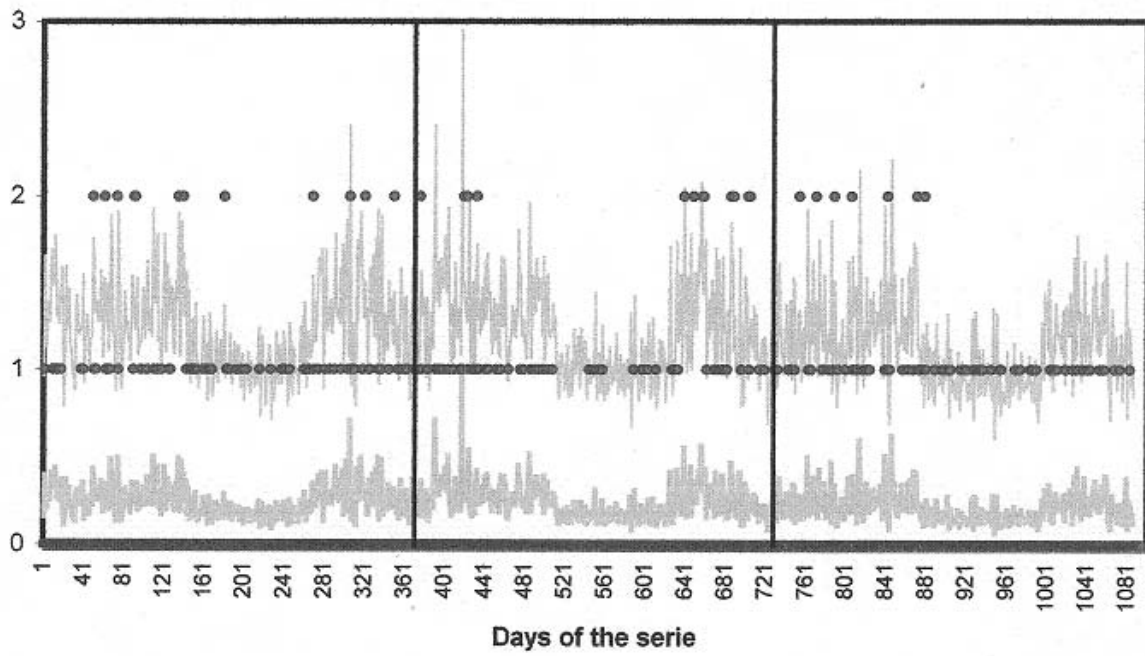


T187) Weather, air pollution, and hospital emergency admissions for intracerebral hemorrhage : Antonio Valdivia¹, Carmen del Arco¹, Guillermo Fernández¹, Cristina Sanz¹, Myrian Pichiule¹, Pilar Gallego¹ : 1. Hospital Universitario de La Princesa, Madrid, Madrid, Spain.

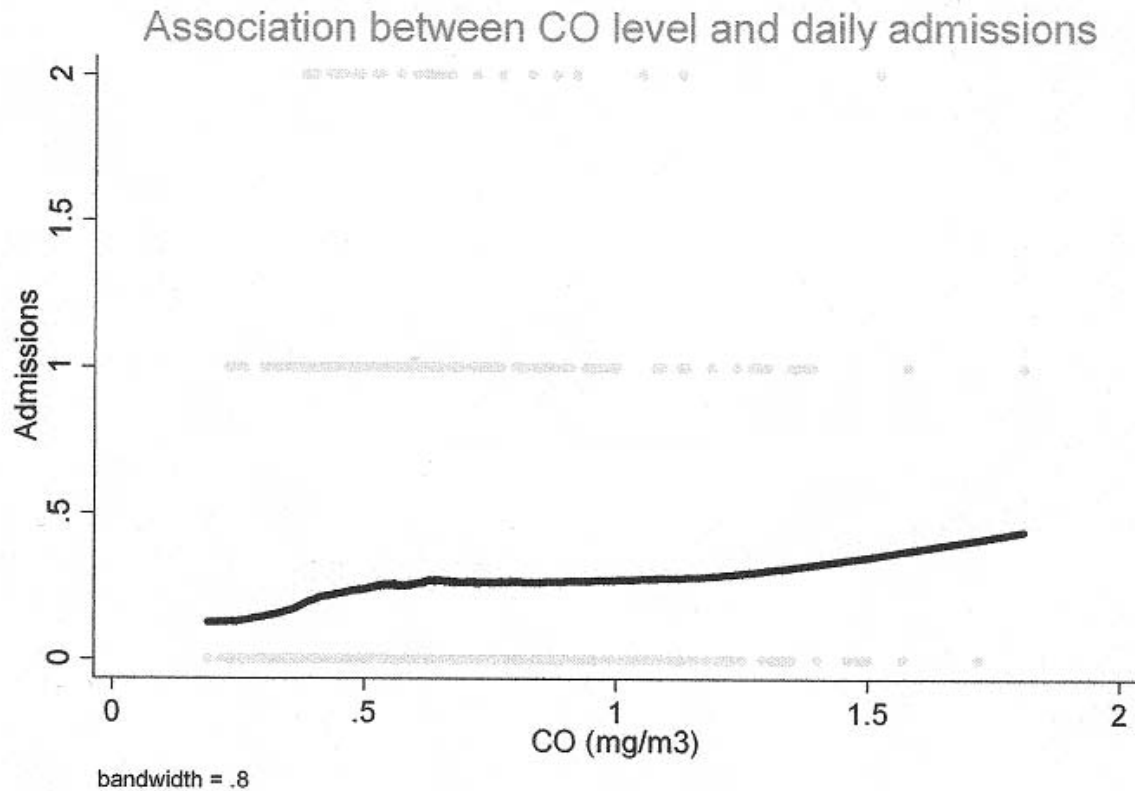
INTRODUCTION: There is a well documented association between weather changes and cardiovascular morbidity and mortality. However there are few published studies that evaluate the effects of weather and air pollution on intracerebral hemorrhage (IH). This study aims to examine the association between air pollution and weather, and emergency admissions due to IH. **METHODS:** Time series analysis of daily admissions for IH (ICD-9 code 431) in the emergency department of a third level hospital over the period 2005-2007. We evaluated the association with daily outdoor humidity, temperature, wind speed, atmospheric pressure (AP), particulate matter, nitric dioxide, sulphur dioxide and carbon monoxide (CO), as well as their daily change compared to the day before admission. After a bivariate analysis, we performed a multivariate Poisson model for each pollutant with adjustment for holidays, weekends and weather covariates, and autoregressive terms. The association measure was the risk ratio (RR), with a 95% confidence interval (95% CI).

RESULTS: There were 262 admissions for IH, 44.7% were women. The median age was 74 years and the mortality was 39.3%. There were significantly less admissions in July-August (RR 0.57, 95% CI 0.33-0.96), June and September (RR 0.62, 95% CI 0.39-1.00). The only weather variable independently associated with daily admissions was the AP increase: 0.8% more risk for each 10 Pascal rise (RR 1.01, 95% CI 1.00-1.01). The only pollutant independently associated with daily admissions was CO: 7.4% more risk for each 0.1 mg/m³ rise (RR 1.07, 95% CI 1.00-1.15) in the most complex model, and 8.0% (RR 1.08, 95% CI 1.03-1.14) in the simplest one. **CONCLUSION:** These results suggest that changes in AP and CO exposure may transiently increase the risk for IH. Our findings are concordant with recent studies that confirm an association between AP elevation and hemorrhagic events, specially in low pressure periods. There are well-known effects of CO on the cardiovascular system, mainly hypertension and arrhythmia triggering, that could justify an increased risk for the blood pressure-dependent vascular ruptures.

Daily admissions for intracerebral hemorrhage 2005-2007



• Observed — Predicted by the model — Upper 95% confidence limit of the model



T188) TRENDS IN ACUTE ADULT POISONINGS IN A TEN-YEAR PERIOD IN TURKEY: FACTORS AFFECTING POOR OUTCOMES : Salim Satar¹, Gulsah Seydaoglu², Ayca Acikalin³, Ahmet Sebe¹, Emre Karakoc⁴, Umut Gumusay¹, Mustafa Yilmaz¹, Yuksel Gokel¹ : 1. Cukurova University, School of Medicine, Department of Emergency Medicine, Adana, Turkey. 2. Cukurova University, School of Medicine, Department of Biostatistics, Adana, Turkey. 3. 25 Aralik State Hospital, Emergency Service, Gaziantep, Turkey. 4. Cukurova University, School of Medicine, Department of Internal Medicine, Intensive Care Unit, Adana, Turkey.

INTRODUCTION: The aim of this study is to evaluate the trends in acute adult poisoning data during ten years at the university emergency department and determine the factors associated with poor outcomes such as severe clinical status, prolong hospital stay and mortality. **METHODS:** Medical records of 4569 poisoned patients admitted to the Emergency Department (ED) of Çukurova University, School of Medicine in Adana, Turkey between January 1997 and December 2006 were investigated. The odds ratio and CI of risk factors for poor outcomes (unconscious clinical status, prolong hospital stay and mortality) were calculated by three different multivariate logistic regression analyses. **RESULTS:** The mean age of 2988 females (65.4% of the patients) was 24.5±10.1 years, whilst the mean age of 1581 male patients (34.6%) was 29.5±13.2 years (p=0.001). Of the poisonings, 80.0% were

suicidal; 69.4% of the women's and 30.6% of the men's poisoning were suicide attempts. The most common types of poisonings were ingestion of drugs (58.4%); organophosphates (23.9%), corrosives (3.4%), mushrooms (1.7%), methanol (2.4%), carbon monoxide (2.1%) and unknown (8.1%). Of the total, 96.0% were discharged from the emergency department, 1.4% transferred to IC and 2.6% died. Mean hospitalization was 2.3 ± 1.7 days (92.0% were hospitalized; of these hospitalized patients 29.9% had prolonged hospital stay). Late arrival, suicidal reason, no intervention before admission and type of substance were found to be independent risk factors in the multivariate models. The significant protective factor was 'year' for all three models. CONCLUSIONS: Young people and women are high-risk groups for acute poisoning and drug poisoning was found to be the most common type of poisoning. Poisoning by psychoactive drugs is increasing over time and organophosphates poisoning seems to remain a serious problem in such an agricultural area. However, the ratios of prolonged hospitalization and mortality is decreasing. Suicidal poisoning is seriously increasing.

T189) Effect of an Electronic Control Device Exposure on a Methamphetamine-Intoxicated Animal Model : Donald M. Dawes¹, Jeffrey D. Ho², James R. Miner² : 1. Physiology and Biophysics, University of Louisville, Santa Barbara, CA, USA. 2. Hennepin County Medical Center, Minneapolis, MN, USA.

INTRODUCTION: Because of the prevalence of methamphetamine abuse worldwide, it is common for subjects in law enforcement encounters to be methamphetamine intoxicated. Methamphetamine has been present in arrest-related death cases in which an electronic control device (ECD) was used. This is the first study on the use of an ECD in an animal model of methamphetamine intoxication. METHODS: 16 Dorset sheep (26-78 kg) received 0.0 mg/kg (n=4), 0.5 mg/kg (n=4), 1.0 mg/kg (n=5), or 1.5 mg/kg (n=4) of methamphetamine hydrochloride as an intravenous bolus during continuous cardiac monitoring. The animals received the following exposures in sequence: a) 5-second continuous exposure; b) 15-sec intermittent exposure; c) 30-sec intermittent exposure; d) 40-sec intermittent exposure. Darts were inserted to depth at the sternal notch and the cardiac apex. Cardiac motion was determined by thoracotomy (smaller animals, < 38.5 kg) or echocardiography (larger animals, > 68 kg). RESULTS: All animals demonstrated signs of methamphetamine toxicity with tachycardia, hypertension, and atrial and ventricular ectopy in the 30-minute period immediately after administration of the drug. Smaller animals (n=8, < 32 kg, average 29.4 kg) had supraventricular dysrhythmias after the exposures. Larger animals (n=8, > 68 kg, average 72.4) had only sinus tachycardia after exposure. One of the smaller animals had frequent episodes of ventricular ectopy after exposures. This animal had significant ectopy prior to the exposures. Thoracotomy performed on three smaller animals demonstrated cardiac rate capture during the exposure consistent with previous animal studies. In the larger animals, none of the methamphetamine-intoxicated animals demonstrated capture. Two control sheep showed evidence of capture similar to the smaller animals. No ventricular fibrillation occurred with capture. CONCLUSIONS: In smaller animals, ECD exposure exacerbated atrial and ventricular irritability, but this effect was not seen in larger animals.

T190) Acute Pancreatitis Related to Naproxen Overdosage. : Emine Akinci¹, Figen Coskun¹, Dilber Ucoz¹, Mehmet Akif Karamercan¹, Mirac Ozturk¹, Hikmet

Duymaz¹ : 1. emergency medicine, ankara egitim ve arastirma hastanesi, Ankara, Turkey.

BACKGROUND: Some drugs are included in the pancreatitis etiology as well as many other factors. Pancreatitis related to excessive intake of nonsteroidal anti-inflammatory drugs is a very rare complication. We present here our patient who had taken drugs (naproxen sodium) with suicidal purpose and developed acute pancreatitis during the clinical follow-up. **CASE:** A 32-year old female presented to the emergency room with abdominal pain, nausea, vomiting and numbness and tremor in hands and feet starting one hour before. She admitted to taking 20 naproxen sodium tablets (11g) 14 hours before presenting to the emergency room. She did not vomit right after taking the tablets. Physical examination findings are as follows: body temperature 97.3 F; pulse 105/minute; BP 100/60mmHg; obese appearance, diffuse sensitivity in the abdomen, and no rebound or muscular defense. Physical findings of other systems were normal. Laboratory findings: WBC: 20900, Glucose: 215mg/dl, HCT: 42, ALP:127, Plt:325000, amylase: 1043; other findings were normal. There was sinus tachycardia on the ECG. Liver and gall bladder were normal on USG; however, it was not possible to evaluate the pancreas. On abdominal CT, steatosis was found in the liver, gall bladder was normal, and there was thickening in the caudal section of the pancreas; and parenchyma was evaluated as heterogeneous and peripancreatic fatty planes as heterogeneous (Baltazar grade C). The patient was admitted to internal diseases intensive care unit with the diagnosis of pancreatitis related to excessive dosage of naproxen, since other factors (alcohol intake, stone in the gall bladder, etc.) were absent. Oral intake was stopped and a suitable fluid-electrolyte treatment was started.

Amylase values of the patient, in whom complaints resolved, were 263 and () in days 2 and 3, respectively. She was discharged on day 4 with improved general health status and laboratory values returned to normal. **DISCUSSION:** It must be kept in mind that excessive intake of nonsteroidal anti-inflammatory drugs can cause pancreatitis, even if it is rare.

T191) Two cases of *Latrodectus tredecimguttatus* poisoning : Sarah Vecchio¹, Valeria Petrolini¹, Carlo A. Locatelli¹, Stefania Bigi¹, Davide Lonati¹, Andrea Giampreti¹, Emanuele Sesti² : 1. Poison Control Center and National Toxicology Information Centre, Toxicology Unit, IRCCS Maugeri Foundation and University of Pavia (Italy), Pavia, Italy. 2. Emergency Department, Foundation Institute San Raffaele - G. Giglio Hospital, Cefalù, (Italy), Cefalù, Italy.

BACKGROUND: *Latrodectus tredecimguttatus*'s venom may cause local effects and systemic symptoms. We describe two cases of poisoning with severe clinical course. **CASES:** case 1: A 28 year-old presented to the Emergency Department (ED) complaining of profuse sweating, chest, abdominal and back pain, dyspnoea, abdominal distension, urinary retention and hyperthermia. Suspecting an aortic dissection or pulmonary embolism, diagnostic exams were performed with negative results. The patient reported he had felt a sting on his calf and seen a black red-spotted spider. The bitten area was mildly hyperemic. *Latrodectus* bite was suspected and symptomatic treatment was started. During the following hours a diffuse cutaneous rash appeared. The following day the patient still had diffuse muscular and abdominal pain, angor, hypertension, leukocytosis, mild increase of TnI, normal ECG and cardiac ultrasound. He completely recovered on day 5. Case 2: A 62 year-old presented to the

ED with a sting on his hand. At admission he presented with sudden chest, dorsal and abdominal pain, sweating and transient loss of consciousness. Chest X-ray, ECG, routine haematochemical and cardiac enzymes were normal. Subsequently, the patient twice developed sweating and syncope. After regaining consciousness, he displayed mild dysarthria, deficit of cranial nerve VII, hyposthenic omolateral arm, hypotension. Encephalic and chest CT-scan were performed to exclude an aortic dissection or stroke, with negative results. In correspondence of the sting an ecchymotic-oedematous lesion, lymphangitis up to the axilla appeared, with leukocytosis and D-dimer increase. Latrodectus bite was suspected and crystalloids, steroids, antihistamines and antibiotic prophylaxis were administered with improvement until discharge on day 17. **DISCUSSION:** Latrodectus venom contains proteins and enzymes that bind to specific receptors, increasing cell membrane permeability and releasing acetylcholine. Local lesions can be accompanied by muscular, chest and abdominal pain, altered consciousness, vomiting, respiratory and cardiac failure and cutaneous rash. Serum antilatrodectus wasn't available in Italy.

T192) An Analysis of Pediatric Acetaminophen Overdoses in An University Hospital : Sabiha Sahin¹ : 1. Pediatric, ESOGU, Eskisehir, Turkey.

INTRODUCTION: The symptoms of acetaminophen overdoses are nonspecific, the diagnosis and treatment of acetaminophen overdoses are more likely to be delayed in unintentional cases of toxicity. Acetaminophen is one of the most common agents deliberately ingested in self-poisoning episodes and a leading cause of acute liver failure. N-Acetylcysteine (NAC) is widely used as the antidote for acetaminophen poisoning, but its usage is not without risk. **METHODS:** Between 1st Jan -31st Dec 2008, 52 acetaminophen overdose cases among 1-18 years old who were admitted to pediatric ED were analyzed. **RESULTS:** 24 of the patients were female. 23 of the patients were intentionally poisoned and 15 of these patients were female and they were all older than ten years old. Of unintentionally poisoned patients 20 were male and they were all younger than ten years old. The mean time interval between ingestion of acetaminophen and arrival to the ED was 3.1 hours. Symptoms were altered mental status in 15 patients, vomiting in 28 patients, and witnessed ingestion in 18 patients. Gastric lavage and activated charcoal were applied to all patients. The patients who were ingested/suspicious ingestion of acetaminophen 200/mg/kg or high dose were treated with NAC protocol intravenously or orally immediately without waiting for serum drug levels. NAC treatment was applied to 6 patients orally, and to 17 patients intravenously. CBC, serum liver transaminase, blood gas analysis, coagulation parameters were detected at 6 hours intervals. Patients were followed in critical care unit for 24-72 hours and mean hospitalisation time was 52 hours. The levels of serum acetaminophen were normal in 29 patients within 48 hours and they were discharged. All patients were re-examined 2 weeks after discharge and no pathological signs and symptoms were recorded. **CONCLUSION:** We can say that, the patients who had ingested/suspected ingested 200 mg/kg or more of acetaminophen were treated by NAC intravenously or orally without waiting for serum drug level, according to the GIS tolerance and the states of unconscious of the patients.

T193) Case Report: a 17-year old patient with altered consciousness and an acute coronary syndrome : Barry Dekeyser¹, Peter Germonpré², Luc Beaucourt³ : 1. Emergency Department, Heilig Hart

Ziekenhuis, Mol, Belgium. 2. Centre for Hyperbaric Oxygen Therapy, Military Hospital, Brussels, Belgium. 3. Unit of Hyperbaric Medicine, Emergency Department, University Hospital, Antwerp, Belgium.

CASE: A 17-year old boy was found unconscious in the bathroom; the carbon monoxide (CO) detection device went off. His vitals were stable. Initial Glasgow Coma Scale was 9/15. High flow oxygen through a non-rebreathing mask was given. At arrival in the emergency room he was intubated and ventilated. Carboxyhemoglobin (COHb) was 19.3%, Troponin-I (TnI) was 0.05 µg l⁻¹ (normal values: 0.00-0.04 µg l⁻¹); ECG was consistent with ischemia (fig.1); A head CT-scan was normal. Diagnosis of CO intoxication was made. The patient received hyperbaric oxygen therapy (HBOT). TnI returned to normal; subsequent ECG was normal. He made a full recovery. Brain MRI and cardiac ultrasound one month later were normal. DISCUSSION: CO intoxication is the most frequent cause of accidental and deliberate intoxication in Europe and the US [1]. Initial symptoms are nonspecific, neurological and cardiac symptoms. The diagnosis of carbon monoxide intoxication is confirmed by measurement of abnormal COHb levels, exhaled CO or a high atmospheric concentration of CO. The European Committee on Hyperbaric Medicine and the Undersea and Hyperbaric Medical Society strongly advise HBOT for severe CO intoxications. The Belgian Advisory Board on Hyperbaric Medicine recently published a national reference guide on diagnosis and treatment. Indications for HBOT recommended by the ECHM are: unconsciousness, any objective neurological impairment, cardiac or respiratory symptoms, pregnancy and COHb >25%. The most important lesion is neurological in nature. Conclusion: Our patient with severe neurological and cardiac manifestations of CO intoxication was successfully treated with HBOT. Emergency physicians should be aware that a high index of suspicion and a clear understanding of the indications for HBOT are mandatory to provide an optimal treatment.



T194) Ayurvedic remedies and lead poisoning : Andrea Giampreti¹, Carlo A. Locatelli¹, Valeria Petrolini¹, Sarah Vecchio¹, Davide Lonati¹, Stefania Bigi¹, Chiara Bonetti², Luigi Manzo¹ : 1. Poison Control Center and National Toxicology Information Centre, Toxicology Unit, IRCCS Maugeri Foundation and University of Pavia (Italy), Pavia, Italy. 2. Internal Medicine, San Bonifacio Hospital, ULSS 20, San Bonifacio, (Italy, San Bonifacio, Italy).

BACKGROUND: Indian remedies in recent years have become common in western countries (1, 2). Apart from being used by 80% of India's population as a traditional system of healthcare, ayurvedic medicine has gained widespread acceptance in the western world over the last decades. Different studies from India and other countries show that ayurvedic preparations could contain toxic concentrations of heavy metals such as lead, mercury, arsenic and cadmium (3, 4). We report a case of lead poisoning in a young man due to chronic assumption of ayurvedic remedies in which abdomen radiograph showing radiopaque foreign bodies was very useful to suspect the diagnosis. **CASE:** A 23 year-old Indian truck

driver presented to the emergency department with a six months history of malaise, anorexia and gripping abdominal pain for which he was previously treated with appendectomy and then with exploratory laparotomy. On initial examination he appeared clinically anaemic (Hb 10 g/dL); initial investigations demonstrated leukocytosis and moderate increase in transaminases. Abdomen X-ray showed two rounded dense bodies and a further inquiry revealed that for six months he had been taking, as dietary supplements, an ayurvedic preparation purchased in India. Lead poisoning was suspected and further investigations revealed blood lead 56 µg/dl (normal < 30) and red cell zinc protoporphyrin 603 µmol/mol heme (normal 20-85). CaNa₂EDTA was administered with a dramatic improvement of his symptoms and haematological and biochemical indices; the examination of blood film revealed basophilic stippling. One year later, the patient was asymptomatic. **DISCUSSION:** The use of traditional remedies is not usually admitted by patients, and people presenting to the ED should be questioned about their use. Heavy metals, in particular lead poisoning, should be suspected and investigated in patients presenting with compatible clinical manifestations and history of use of ayurvedic remedies. References: 1. Muzi G et al. Med Lav. 2005 Mar-Apr; 96(2): 126-33. 2. Thanacoody HKR. Clin Toxicol Vol 46 (2008), p 381. 3. McElvaine et al. JAMA 1991; 264: 2212-2213. 4. Saper RB, et al. JAMA 2008; 300: 915-923.

T195) HYPERTONIC- SALIN TREATMENT IN TRICYCLIC ANTIDEPRESSANTS (TCAs) POISONING : Zeynep Kekec¹, Ferhat Icme², Nihal Toprak³ : 1. Cukurova University Medical School, Department of Emergency Medicine, Adana, Turkey. 2. ..Atatürk Educational and Research Hospital, Department of Emergency Medicine, Ankara, Turkey. 3. Toros Government Hospital, Department of Emergency Medicine, Mersin, Turkey.

Tricyclic antidepressants (TCAs) are the most frequent cause of poisoning attending to our Emergency Department (ED). They affect peripheral, central nervous (CNS) and cardiovascular system with overdoses.

Most cases of fatality are secondary to cardiac toxicity. We aimed to introduce the efficacy of hypertonic saline treatment in cardiovascular effects of TCAs poisoning in 3 cases admitted to our ED associated with significant cardiac toxicity manifestations. We construct the study after the local ethics committee approval.

Three cases aged 20, 15 and 18, were brought to ED after intentional ingestion of overdose amitriptyline. Patients presented altered mental status and anticholinergic syndrome manifestations on the 1.5th, 2.5th, 6th hours of ingestion subsequently.

CNS physical examination of all cases demonstrated coma with GKS(E4M5V3), GKS (E1M5V2), GKS (E2M5V2) subsequently. Respiratory depression developed in 2 cases and mechanical ventilation was required.

The ECG revealed abnormal findings especially QTc interval prolongation (>45 mm) in all cases, and their vital signs on admittance were unstable. Immediate evaluation, stabilization of vital signs, gastric decontamination were employed, and activated charcoal, diluted 300cc % 10NaCl in %5 DW was administered. Vital signs, CNS toxicity, ECG abnormalities resolved and all cases recovered without sequelae. As a result hypertonic saline may be an alternative treatment in TCAs poisoning

Even though no clinical studies declaring hypertonic saline treatment is effective in TCAs

poisoning our cases are the first. Further studies may indicate the efficiency of hypertonic saline treatment.

Keywords: Tricyclic antidepressants, poisoning, hypertonic saline

T196) Methaemoglobinaemia Precipitated by Cocaine Use : Fiona M. Burton¹, Malcolm W. Gordon¹, Tasmin Sommerfield³, Sanjay Rao¹, Peter Kabunga² : 1. Emergency Department, Southern General Hospital, Glasgow, United Kingdom. 2. Borders General Hospital, Melrose, United Kingdom. 3. Department of Public Health, Glasgow, United Kingdom.

BACKGROUND: We present a case series of 4 patients who have presented to various Emergency Departments in Scotland with methaemoglobinaemia secondary to cocaine abuse. Cocaine is becoming an increasingly abused drug and presents to the Emergency Department in a variety of ways. Common presentations include anxiety, palpitations, chest pain, convulsions and myocardial infarction but standard textbooks do not associate it with methaemoglobinaemia. We have located only one previous case report that links cocaine with methaemoglobinaemia. **CASE:** The authors were able to demonstrate that the cocaine was 'cut' with benzocaine. Benzocaine has been used as a topical local anaesthetic for awake intubations, transoesophageal echocardiograms and gastrointestinal endoscopy but it has been banned in many hospitals because of its ability to cause methaemoglobinaemia. Urinary toxicology showed the presence of benzocaine in one of our patients and this is believed to be the cause. **DISCUSSION:** As clinicians it is important to rapidly recognise methaemoglobinaemia as it can be fatal. It can be treated effectively with methylene blue and supportive measures. This and the previous report add cocaine abuse to the potential causes of methaemoglobinaemia that may present to an Emergency Department. We have issued a public health warning throughout Scotland to warn users and medical staff. The Toxbase database has been updated to include this information. We recommend that every Emergency Department should stock methylene blue.

T197) Compartment Syndrome due to Snakebite : Figen Coskun¹, Emine Akinci¹, Mirac Ozturk¹, Halil Cetinkaya¹, Cahit H. Halhalli¹, Sebnem Bozkurt² : 1. Ankara Training and Research Hospital, Ankara, Turkey. 2. Istanbul Fatih Sultan Mehmet Training and Research Hospital, Istanbul, Turkey.

BACKGROUND: Snakebite is an important cause of mortality and morbidity particularly in rural areas of our country. Depending on the severity of toxin, local or systemic signs may develop. Local findings are edema, hematoma and gangrenous lesions. Systemic findings include fever, nausea and vomiting, circulatory collapse, mild jaundice, delirium, convulsions and coma. Death may occur in 6-48 hours due to secondary infections, disseminated intravascular coagulation, neurotoxicity, acute renal failure or intracranial bleeding. **CASE:** 46-year-old female patient presented with a swollen hand. Her history revealed a snakebite on the fifth finger of her right hand about 4 hours ago. She had dizziness and nausea followed by 2 episodes of vomiting. On her physical examination, BP 60/40 mmHg, HR 95/min, body

temperature 36 °C. Her right hand and fingers were cold and pale with diffuse swelling and her right forearm was edematous. Active movements of her right hand was restricted due to pain and passive extension of the fingers was moderately painful. Peripheral pulses of the forearm couldn't be detected. Immediately a large bore IV access was placed and the patient was started on fluid replacement. Tetanus prophylaxis and broad spectrum antibiotics were administered. Laboratory tests revealed WBC 18900 /uL, Hgb 14.2gr/dl, aPTT 34.9 sec, PT 14.5 sec, INR 1.25 with a normal biochemistry panel. Color duplex sonography of the right arm showed patent radial and ulnar arteries and right subclavian artery. Orthopedics was consulted for a diagnosis of compartment syndrome. Local wound care and short arm splint was placed. She was hospitalized in intensive care unit for close monitoring. 50 cc of polyvalent snake antiserum was administered. Fasciotomy was not necessary as her edema diminished. There were no signs of systemic intoxication during her course and she was discharged on day 7 as edema resolved. **DISCUSSION:** Treatment of snakebite should start on the scene and all patients should be followed closely for the first 24-48 hours. Successful administration of snake antivenin results in decreased orthopedic and systemic complications.

T198) The General View To Caustic Poisonings Of Children : Sabiha Sahin¹ : 1. Pediatric, ESOGU, Eskisehir, Turkey.

INTRODUCTION: The most important reason for accidental caustic poisoning is keeping cleaners and detergents in food and drink cups. While the ratio of caustic poisoning was 16.7% in 2003, today it has been found as high as 23.7% in our department so there has been a clear rise in this ratio. We want to point out the importance of caustic intoxications.

METHODS: Between 1st Jan-31st Dec 2008, corrosive substance poisoning cases who were admitted to the pediatric ED were evaluated retrospectively for age, symptoms and forms of poisonings.

RESULTS: During the study, there were 65 patients poisoned by caustics. 43 (66.15%) of the cases were male. Patients were grouped by age in 5 year range periods: 47 (72.3%) of cases were in 0-4 years old, 9 (13.8%) were in 5-9 years old and 9 (13.8%) were in the range of 10-18 years old. The poisoning rate of the 0-4 group was meaningfully higher and all of them were accidental. 2 of 9 cases who were older than 10 were voluntarily poisoned and the others were accidental. The routes of exposure to the toxic substance was oral poisoning in 63 cases (96.9%), and inhalation/respiratory in 2 cases. On first appearance of the patients evaluated, 42 (64.6%) of them were realized by their parents and 23 of them (35.3%) were brought to the hospital with vomiting and nausea complaint. With regards to the duration from poison ingestion to hospital arrival for evaluation, 49 patients (75.3%) were admitted to the hospital in an hour. When we look at the relation between the seasons, 31 (47.7%) cases happened in summer, so it has been concluded that the rise of poisonings in the summer term was meaningfully higher statistically (x Square Pearson test $p < 0.001$). 65 cases were evaluated with Pediatric Surgery. Esophageal strictures were dilated in two patients in the clinic observations.

CONCLUSION: As a result, we need to inform people to keep cleaning substances in the non-encouraging original packaging and keep them away from children and with this aim, both Health Institutions and the media should manage the education and inform the public.

T199) THE GENOTOXICITY AND CYTOTOXICITY AMONG PATIENTS DIAGNOSED ORGANOPHOSPHATE POISONING : Salim Satar¹, Ahmet Kayraldiz², Eyyup Rencuzogullari³, Emre Karakoc⁴, Ahmet Sebe¹, Akkan Avci⁵, Hasan Yesilagac⁶, Mehmet Topaktas³ : 1. Cukurova University, School of Medicine, Department of Emergency Medicine, Adana, Turkey. 2. Kahramanmaraş Sutcuimam University, Faculty of Sciences and Letters, Department of Biology, Kahramanmaraş, Turkey. 3. Cukurova University, School of Sciences and Letters, Department of Biology, Adana, Turkey. 4. Cukurova University, School of Medicine, Department of Internal Medicine, Division of Intensive Care Unit, Adana, Turkey. 5. Istanbul Sisli Etfal Research and Education Hospital, Emergency Medicine, Service, Istanbul, Turkey. 6. Mus State Hospital, Emergency Medicine Service, Mus, Turkey.

METHODS AND RESULTS: The genotoxicity and cytotoxicity were investigated in 40 patients (20 female age: 21,57±1,42 and 20 male age:29,35±3,59) diagnosed with organophosphate poisoning in the emergency department. Chromosome aberrations (CAs), sister chromatid exchanges (SCEs), micronucleus (MN), mitotic index (MI), replication index (RI), nuclear division index (NDI) were evaluated in peripheral bloods of patients. The blood samples were collected from the patients on admission to the emergency department before treatment and after treatment before discharge from the intensive care unit. **CONCLUSION:** The CA, MI, NDI values were increased before discharged when compared to admission. However, there are no differences in mean SCE, frequency of MN and RI.

T200) Cyanide poisoning in cancer : Utham R. Shanker¹ : 1. Emergency Unit, East Sussex NHS trust UK, Eastbourne, East Sussex, United Kingdom.

Patients diagnosed with cancer opt for many treatment modalities for their conditions. This includes some unconventional methods other than allopathic medicine. Laetrile is claimed by some homoeopathic treatment group as an alternative way to treat advanced cancer. Amygdalin is a cyanogenetic glycoside found in plants particularly in the pits of fruits of the plants belonging to Rosacea such as Peaches and Apricots. Laetrile is an acronym used to describe a purified form of Amygdalin. It is also marketed as Vitamin B17 though it is not a vitamin. The United States Food and Drug Administration (FDA) continues to seek jail sentences for people selling laetrile for cancer.

In the United Kingdom ingestion of large quantities of crushed Apricot kernels seeds have led to cyanide poisoning. These patients present with symptoms of mild poisoning like palpitations, tremors to symptoms of severe poisoning like unconsciousness and death.

In the literature there have been very few cases reported and also on systematic review of the clinical evidence of Laetrile for cancer. We would like to present a recent case of a patient with advanced bronchogenic carcinoma who presented with cyanide poisoning after consuming 40 crushed apricot kernels for breakfast along with cereals and also discuss the pharmacokinetics of laetrile and recent advances in treating cyanide poisoning.

T201) Acute Isoniazide poisoning : Alberto Kurzbaum¹ : 1. Emergency Medicine, The Baruch Padeh Medical Center, Poria, Tiberias, Israel.

BACKGROUND: Status epilepticus is a medical emergency. Time to control of seizures is critical to avoid potentially permanent neuronal compromise and mortality and an operational definition is advocated of 5 minutes of continuous seizure to start treatment as status epilepticus. Acute poisoning with a wide variety of drugs or toxins may present with seizures and status epilepticus. In many instances prompt identification of the agent is not possible and a standard approach to seizure management is usually effective. However in some instances early identification of the causative agent may modify the standard approach as in poisoning with lithium, tricyclic antidepressants, theophylline, salicylates and isoniazid. **CASE:** We present the case of a 17-year-old female patient in whom a diagnosis of Isoniazid overdose was made after she presented to the Emergency Medicine department with profound alteration of mental status and status epilepticus. We review the clinical picture and the treatment of this medical emergency. **DISCUSSION:** Isoniazid poisoning should be suspected in any patient with acute onset of seizures, especially when accompanied by profound metabolic acidosis and in such cases it is justifiable to give empirical treatment with pyridoxine.

T202) Organophosphate Poisoning and Intermediate Syndrome : Figen Coskun¹, Emine Akinci¹, Hikmet Duymaz¹, Elnare Gunal¹, Kubilay Vural¹, Mehmet Akif Karamercan¹ : 1. emergency medicine, ankara egitim ve arastirma hastanesi, Ankara, Turkey.

BACKGROUND: Acute organophosphate poisoning is an important cause of morbidity and mortality throughout the world. Toxic effects are seen in three phases named as acute cholinergic crisis, intermediate syndrome (IS), and late neuropathy. **CASE:** A 44 year-old male presented with pain in his feet. On medical history he reported he had diluted 2 teaspoonful of pesticide and rested his feet in this solution for about 30 minutes about 10 hours ago with the belief that it would be good for the fungi in his feet, and he had pain and a burning sensation in his feet throughout the night. Vital signs were normal. No pathological findings were present on physical examination. His feet were bilaterally hyperemic and edematous with erythematous lesions. Blood tests were ordered. All the parameters were normal except for WBC:13.400 in CBC. No pathology was found in biochemical values except for a slight increase liver function tests. Anesthesia was consulted for the patient since his pseudocholinesterase (PCE) level was high (13.831U/L(4600-11.500U/L)). He was admitted in intensive care unit. Decreases were found in liver function tests repeated the next day and PCE level (11.979U/L). The patient was discharged two days later with no clinical finding observed and normal PCE and WBC values. He presented to our ER 3 days after his discharge with intractable fever. He was in a confused state of mind, and BP:110/70mmHg, HR:110/min and body temperature was:102.7 F. There was no infection focus found on physical examination to explain the fever. There was increase in his oropharyngeal secretions and rales were heard together with respiratory sounds. It was observed that the lesions on his feet had regressed. Lab results were: WBC,11.300; AST,67; ALT,102; GGT,146 and PCE,11.806U/L. He was admitted to ICU again. He was discharged four days later with no clinical findings and normal PCE. **DISCUSSION:** IS becomes apparent within 1-4 days following the acute organophosphate poisoning. The patient seems recovered when the acute

poisoning is over. However, development of IS is possible.

T203) Metal fume fever: an uncommon consequence of inhalation injury : Alberto Kurzbaum¹ : 1. Emergency Medicine, The Baruch Padeh Medical Center, Poria, Tiberias, Israel.

BACKGROUND: Metal fume fever (MFF) is an acute, self-limited occupational disease caused by the inhalation of excessive concentrations of a variety of heavy metal oxide fumes during welding of galvanized metal or melting metal. The risk is increased when these activities are performed in confined and unventilated spaces. Although well recognized by occupational medicine physicians and clinical lexicologists, MFF is rarely encountered in the emergency department. The clinical presentation strongly resembles that of common viral respiratory diseases. The diagnosis is based on the clinical findings and is confirmed by the occupational history combined with the rapid resolution of the symptoms. Therefore, awareness of the disease and knowledge of the patient's occupational history are crucial to its proper diagnosis. The mainstay of management of MFF is prevention of subsequent exposure to harmful metals. **CASE:** We describe a patient who presented to our emergency medicine department on two different occasions with MFF. The natural history, pathogenesis, clinical presentation, and management of the disease are discussed.

T204) Probability of increasing traumatic accident for drivers of motorized means transportation because of narcotic use and necessity to prescribe higher dose of tranquilizers for them : Hammid Kariman¹ : 1. emergency, sbmu, Tehran, tehran, Iran.

INTRODUCTION: Motorcycles and inter-civil means comprise the majority of applicants to hospitals, so it is important to consider conditions of narcotics abuse in increasing probable hard accidents trauma. **METHODS:** In this research, we considered patients who were drivers or motorists who went to Traumatic emergency Hospital and were hospitalized. We stabilized vital signs first and then we obtained a history for using narcotics for the patient or his/her companions, and we get urinary sampling and sent the kit to the lab. In this study we enrolled 109 patients who were nondrivers or motorists with non traumatic problem. **RESULTS:** Final findings showed that these patients including women, none of them have any narcotics abuse, but from men, only 43% were healthy from history and lab kit consideration while 39 of them, 48%, had narcotics abuse from history or laboratory consideration. **CONCLUSION:** It is necessary for practitioners working at emergencies of hospitals in trauma to prescribe tranquilizers in higher dosages and it is necessary to do cultural acts for reducing narcotics abuse

T205) Acute Hyponatraemia after "Ecstasy" Use : Brian J. Burns¹ : 1. St.Vincent's Hospital, Sydney, NSW, Australia.

CASE: An 18 year-old female was brought by ambulance to a tertiary Emergency Department (ED) in an agitated state. She had ingested an "ecstasy" tablet prior and was

witnessed to have engaged in apparent excessive water intake prior to presentation. In the ED she was confused and agitated. Her GCS fluctuated between 10 and 12 with no motor deficit. Blood glucose was normal. Following sedation the patient vomited and was intubated using rapid sequence induction. CT brain showed mild cerebral oedema. Serum Na⁺ was 123mmol/L, serum osmolality was 264mOsm/kg. Urine osmolality was 52mOsm/kg. Diagnosis was dilutional acute hyponatraemia with cerebral oedema. She developed myoclonic jerks and possible seizures. Sodium was corrected to 137mmol/L, using hypertonic saline over the proceeding 12 hours. She made an uneventful recovery. **DISCUSSION:** Acute hyponatraemia with altered level of consciousness or seizures should be corrected slowly with 3% hypertonic saline at 1ml/Kg/hr, for a maximum of 6 hours. Correction should be limited to 12meq/L of sodium in the first 24 hours. Close monitoring of serum Na⁺ is necessary. Diuretic can be used in hypervolaemic dilutional hyponatraemia to assist excess water excretion. This rare, but life-threatening complication of “ecstasy” use raises the discussion of legal control of this drug.



Axial slice CT brain showing mild cerebral oedema

T206) A Sydney Tertiary Emergency Department Experience of Gammahydroxybutyrate over a Mardi Gras Weekend : Brian J. Burns¹, Gonzalo Aguirrebarrena¹ : 1. St.Vincent's Hospital, Sydney, NSW, Australia.

INTRODUCTION: Gammahydroxybutyrate(GHB), also known by its street name 'G', 'GBH', 'liquid E' or 'fantasy' is a common recreational drug used in Sydney. There have been previously identified 9 GHB related deaths in Australia between 2000 and 2003. (4)
METHODS: We carried out a prospective observational study of suspected GHB Emergency Department presentations over a 72 hour period. **RESULTS:** 16 patients (1 female-patient number 10) were included. Median age was 24.5 years (19-38). Stimulation with 'painful' stimulus (jaw thrust) increased the median GCS by 2 points (0-12). In the 7 patients with an arrival GCS \geq 8, jaw thrust increased the GCS by an average of 4.8 points. Two patients required intubation by rapid sequence induction. Median time to discharge from the ED was 205min (110-580min). **CONCLUSION:** We recommend that the GHB intoxicated patient be managed in a fully monitored resuscitation cubicle with frequent stimulation and observations. Nurses proficient in critical care are a necessity for this practice. Intubation is not needed in the comatose (GCS<8) patient, unless airway compromise, apnoea or breathing difficulty due to aspiration.

T207) CASE REPORT: PNEUMOMEDIASTINUM DUE TO SYMPATHOMIMETIC SUBSTANCE ABUSE : Nader Tavakoli¹, Maryam Mehrazi¹, Behruz Hashemi¹ : 1. Iran University Of Medical Science, Tehran, Iran.

BACKGROUND: Pneumomediastinum is due to air entrance into the mediastinum. The spontaneous type is reported following sympathomimetic or hallucinogen substance abuse. This is a case report of pneumomediastinum following sympathomimetic substance abuse.
CASE: A 25 years old man came to the emergency department with chief complaint of chest pain and shortness of breath from last night prior to admission. Quality of pain was pleuritic and associated with palpitations but without nausea and vomiting. The patient denied any substance abuse at first. There was no past medical and family history of cardiac diseases, diabetes or hypertension. On physical examination the patient was agitated but not in respiratory distress. The patient was afebrile. The only abnormal positive finding in cardiovascular and respiratory examination was mediastinal crunch. Cardiac enzyme assay and electrocardiograph were normal except for mild sinus tachycardia. There was evidence of pneumomediastinum on the chest radiography that was confirmed on chest CT scan. Serum amylase level and barium meal were normal. The patient confessed to sympathomimetic substance (crystal) abuse in the last night prior to admission. The patient was observed and admitted for 24 hours in the emergency department and then was discharged with good recovery and feeling of well-being without any complication in follow-up visit.
DISCUSSION: Pneumomediastinum caused by amphetamines, ecstasy, methamphetamines

and crystal has been previously reported in the literature. Probable mechanism is initially, alveolar tearing causing pulmonary interstitial emphysema. This tearing can be due to various mechanisms causing Tran mural pressure differences. Valsalva maneuver applied in order to increase the euphoric feeling and high levels of physical activity also increase the alveolar pressure temporarily. As a result, air entering the pulmonary interstitial space passes to the mediastinum through leakage via bronchovascular layers. Treatment is supportive and this problem will recover without any sequels.

T208) Methadone intoxication – being alert to the problem! : Patricia Freitas¹, Elsa Mourão¹, Nadya Pinto¹, Paulo Barreiros¹, Ana Lufinha¹ : 1. Prehospital Emergency Medical Service - VMER, Hospital de São Francisco Xavier, Lisbon, Portugal.

BACKGROUND: Methadone overdose is a rising problem in many countries, being responsible for many deaths. **CASE:** The Prehospital Emergency Medical Service (VMER) received a call for an unconscious 43 year-old male patient. Arriving at the scene they found a bradypneic man breathing from a high concentration mask placed by the first responders. He had a Glasgow Coma Scale of 3 and pupillary miosis. There was history of ingestion of Methadone from a friend so naloxone was immediately administered by vein. The recovery was remarkable with hemodynamic stability, no respiratory distress and preserved consciousness. Only the blood glucose was high (405). The patient was a smoker, denied any drug addiction and had no other relevant past history. He was oriented to the nearest hospital without medical assistance. About four hours later, when waiting for clinical and laboratory reevaluation the same clinical situation rapidly installed, with further need of naloxone, from which he recovered for the second time. The lab work and drug assays were unremarkable, including opiates. He was admitted for surveillance for 36 hours and discharged without any complications. **DISCUSSION:** In a patient naive to opiates, the consequences of methadone ingestion cannot be overemphasized. It constitutes a serious medical emergency with specifics that have to be considered in caring for patients.

T209) Serum Lead Level in Males with Opium Dependence Syndrome in Comparison with Healthy Males in Tehran : Nader Tavakoli¹, Nader Tavakoli¹, Maryam Mehrazi¹, Behruz Hashemi¹ : 1. Iran University Of Medical Science, Tehran, Iran.

INTRODUCTION: Inorganic lead is undoubtedly one of the oldest occupational toxins. Opium addiction is one of the most prevalent forms of addiction in Middle East countries such as Iran. There are several reports that suggest pathologic findings such as abdominal pain, anemia, and nephropathy in opium-addicted patients. In this study we compared serum lead levels in addicted patients and healthy individuals living in Tehran to find any probable relation between opium addiction and serum lead level. **METHODS:** In this cross-sectional analytic study, we compared serum lead levels of 48 Tehranian healthy adult (>18 years) males without any industrial risk factor for lead poisoning and 40 patients suffering from opium dependence syndrome and using opium in oral form and another group of 46 who uses opium in inhalation form. **RESULTS:** Differences in serum lead levels between oral opium users and healthy persons was statistically significant (P value <0.001) but there wasn't any

significant difference between serum lead level in opium inhalation users and healthy control patients (P value= 0.93). In addition we compared mean serum lead level in opium inhalation users and oral opium users, and found the difference was also statistically significant (P value <0.001). **CONCLUSION:** Our findings are in support of the hypothesis that serum lead levels are higher among people using opium. This may be suggestive of the contamination of opium with lead.

T210) The Case Reports of 2 Children Having Toxic Myocarditis due to Scorpion Sting : Mehmet Dokur¹, Mustafa Dogan² : 1. Kilis State Hospital, Kilis, Turkey. 2. Gaziantep Children Hospital, Gaziantep, Turkey.

BACKGROUND: Although scorpions live all over the world, scorpion sting becomes an important health problem in some certain countries and seasons. Scorpion sting may be deadly, especially for children. Mortal types may cause multiorgan insufficiency, neurotoxicity and cardiotoxicity. Morbidity and mortality are due to cardiotoxicity. Especially in some regions, it is diagnosed that 50% of children developed myocarditis due to scorpion sting. Scorpion stings are frequently encountered in agrarians of southeastern of our country especially in summer season which may cause toxic myocarditis and may result in death if not diagnosed early and properly treated. **CASES:** In this presentation we describe 2 pediatric cases who developed toxic myocarditis due to scorpion sting and presented to our hospital on the same day. **DISCUSSION:** Scorpion sting may be deadly especially for children. Scorpion antiserum, liquid electrolyte treatment, cardiac insufficiency treatment, dopamine and dobutamine are advised for the cases developing myocarditis due to scorpion sting.

T211) Clinical analysis of prognosis in seawater drowning patient : Hyung Bin Kim¹ : 1. Department of Emergency Medicine, Pusan National University Hospital, Busan, Korea, South.

INTRODUCTION: This study was performed to analyze the clinical data of drowning patients and suggest management for seawater drowning patients. **METHODS:** We retrospectively analyzed medical records of 56 drowning patients who visited the Emergency Department in Pusan National University Hospital between Jan. 2004 and Dec. 2008. We collected data for each drowning patients' submersion time, consciousness state on arrival, radiologic findings on arrival and discharge, kinds of water, laboratory finding, duration of hospital days, neurologic outcome, causes of seawater drowning and alcohol level. **RESULTS:** Among the initial level of consciousness, kinds of water, alcohol level and presence of aspiration, the initial level of consciousness was related to prognosis. The kinds of water and blood alcohol level did not affect the prognosis. **CONCLUSION:** The Pusan national university hospital is located in port city and we collected 56 cases of drowning for 5 years. Consciousness state on arrival is the most important to outcome of drowning patient. So, short duration of submersion, and rapid resuscitation is important.

T212) The predictive factors for early hospital discharge in glyphosate surfactant herbicidal poisonings : Young-Ho Jin¹, Jae-Chol Yun¹, Tae-O Jeong¹, Jae-Baek Lee¹ : 1. Chonbuk national University Hospital, Jeonju, Korea, South.

Purpose: Glyphosate-surfactant herbicide (GSH) is a widely used herbicide that is generally thought to be safe. In large ingestions, however, it can result in serious and lethal toxicity. The purpose of this study is to identify some predictive factors for early hospital discharge in GSH poisonings.

Methods: Patients were divided into two groups. Group A consisted of patients who were discharged earlier within 48 hrs without any complication since ED admission. Group B are patients who was admitted for more than 48 hrs in the ED and/or who died within 48 hrs. Patient demographics, drug intoxication information, chest X-ray (CXR) findings and laboratory data during the first 24 hrs on ED admission were collected. We were analyzed for their role in two groups. Univariate and odds ratio analysis were performed. The predictive factors for early hospital discharge were then determined by using logistic regression analysis.

Results: Seventy three patients (51 male, 22 female) were enrolled with 39 patients in group A and 34 patients in group B. By univariate and odds ratio analysis, following variables showed statistically significant differences between group A and B; estimated amount, GSC score, CXR findings, arterial pH, PO₂, bicarbonate, BUN, creatinine, amylase and potassium. In the analysis of clinical symptoms and signs, mental change, dyspnea and voice change were the significant findings in group B (p<0.05). In multivariate logistic regression analysis to predict the early discharge in GSH poisonings, 3 variable (normal CXR finding, no metabolic acidosis, BUN level >23) were found to be highly associated with the early discharge from hospital. We established the following multiple logistic regression model :

$\text{Log}(p/1-p) = -3.02 + 1.85(\text{normal CXR}) + 1.98(\text{no metabolic acidosis}) + 1.46(\text{BUN } >23)$

Conclusion: Although GSH poisoning exhibits multiorgan toxicity, its mortality was relatively low rate (5.5%). We conclude that acid-base status, chest X-ray finding, and serum BUN level during the first 24 hours are useful predictive factors for early discharge from hospital in GSH poisonings.

T213) Hepatic Failure Due to Thymus Vulgaris Oil : Aslihan Yuruktumen¹, Nil Hocaoglu², Murat Ersel¹, Murat Ozsarac¹, Selahattin Kiyan¹ : 1. Ege University School of Medicine Department of Emergency Medicine, Izmir, Turkey. 2. Dokuz Eylul University School of Medicine, Department of Pharmacology and Poisoning Information Center, Izmir, Turkey.

BACKGROUND: Thymus vulgaris (thyme) continues to be one of the most commonly used herbs in Turkey and Europe. There are several reports of thymus vulgaris toxicity presented with nausea, tachypnea and hypotension, however toxic hepatitis had rarely been reported in literature. **CASE:** A 38 years-old male received 25 cc commercial thymus vulgaris oil orally within two days for dyspeptic complaints. Then he developed nausea, vomiting and diarrhea. Physical examination was normal. Laboratory studies revealed AST 1470 U/L, ALT 506 U/L. Abdominal ultrasound and echocardiography were normal. Viral serology including Anti HCV, Hbs Ag, Anti Hbs, Anti HAV Ig M, Anti Hbc Ig M, EBV VCA Ig M, Anti CMV Ig M were negative, Anti HAV Ig G, Anti Hbe, Anti CMV Ig G and EBV VCA Ig G were positive. NAC 300 mg/hours intravenously was administered for hepatic failure. High

aminotransferase levels (table 1) and complaints gradually decreased within a few days. **DISCUSSION:** Thyme is a herbaceous perennial plant belonging to the Lamiaceae family. Key constituents of thyme include essential oils, such as the phenols thymol and carvacrol, linalool and terpenoid etc. Thymol and carvacrol are reported to act as an antioxidant, antimicrobial agent, a stomach carminative, etc. Thyme is generally recognized as safe when it's used in amounts found in foods. Thyme oil used in a non-diluted form is recognized as likely unsafe. Dietary administration of 2% thyme causes significantly elevated glutathione S-transferase (GST) activities. Mixture of Cuminum cyminum fruits with thymus vulgaris are accompanied by increases in serum AST activity. In another study, four acetophenone glycosides isolated from thyme extracts, had cytotoxic effects in vitro. There are several studies on the effects of thyme, however similar cases are not reported in literature. In our case, the patient received a high amount of thyme oil relative to daily practice (2-3 drops a day). Other causes of hepatic failure were eliminated. Ingestion of high amounts thyme oil can result in the development of toxic hepatitis. We should be aware of serious poisonings that can occur with uncontrolled use of herbal products in traditional medicine.

Laboratory Findings

Days	Aspartate Transaminase (AST) (U/L)	Alanine Transaminase (ALT) (U/L)	Total bilirubin / Direct bilirubin (mg/dl)	Prothrombin time (second)	Gamma-glutamyltransferase (U/L)
1st day	1470	506	1.02/0.6	17.2	-
2nd day	5558	1581	1/0.61	15.9	419
3rd day	3284	1529	1.38/0.74	14.4	564
3rd day	1289	1026	1.01/0.62	12.7	554
9th day	15	14	0,9/0,2	-	11

T214) DRUG-INDUCED ACUTE DYSTONIC REACTIONS : Aylin Arici², **Durgul Ozdemir**¹, Kubilay Oransoy², Sinem Evcim², Yesim Tuncok², Sule Kalkan² : 1. Dokuz Eylul University, Medical School, Pediatrics, izmir , Turkey. 2. Dokuz Eylul University, Medical School, Pharmacology, izmir, Turkey.

INTRODUCTION: The aim of this study was to retrospectively analyse the drug induced dystonic reactions reported to Dokuz Eylul University Drug and Poison Information Center (DPIC) between January 1993 and December 2008. **METHODS:** We evaluated the drug induced dystonic reaction's epidemiologic data and the distribution of the drugs that caused the dystonic reactions. Statistical analysis was performed by chi-square test. **RESULTS:** 81.1% of the drug induced dystonic reaction were in children. Most of them were female

55.6%. Female/male ratio were 1.5 and 1.0 in the children and adults respectively. Side effects related to the dystonic reaction were higher in the children between 0 and 12 age (87.5%). Exposed amount of the drugs were nontoxic in 57.7%, unknown and toxic 20.0%. Reported dystonic reactions related the nontoxic amount of the drugs were higher in the first 24 hours in the children. Metoclopramide (44.4%, n=40), haloperidol (35.6%, n=32), risperidone (15.6%, n=14), trifluoperazine (2.2%, n=2), flufenazine (1.1%, n=1), and chlorpromazine (1.1%, n=1) were the drugs that caused the dystonic reaction. Metoclopramide (47.9%, n=35) and haloperidol (47%, n=8) were the most frequent reason for the dystonic reactions in the children and the adults respectively. Dystonic reactions related to metoclopramide were higher in children between 0 and 12 age. Drug induced dystonic reactions related to nontoxic amount of drugs were higher in the same age group. CONCLUSION: Metoclopramide, haloperidol and the risperidone are the most frequent reason of drug-induced dystonic reactions. Use of metoclopramide in children between 0 and 12 years of age needs to be reviewed because of the metoclopramide-induced dystonic reactions that are seen in the nontoxic doses.

T215) Hydrogen peroxide accidental injection during circumcision : Gu Hyun Kang¹ : 1. Emergency, Hallym University Medical Center, Seoul, Korea, South.

CASE: A 15-yr old male patient was scheduled to surgery for redundant prepuce. He was draped with sterile method.

The doctor performed local anesthesia with a prepared syringe in the distal penis. About 6 ml was injected. We found a large swelling within the injection site and much of bubble was drained via the injection site. Subcutaneous emphysema was palpated in the distal penis. The physician immediately stopped the injection and rechecked the local anesthesia medication. We found hydrogen peroxide was in the syringe instead of lidocaine. At the preparation a new nurse made an error and she confused the medication. The patient's vital signs were stable. The patient complained of pain at his penis. There were no other symptoms. We immediately dissected and performed excision. The injected area was dissected and revealed discolored tissues. The discolored and bubbled tissues were dissected. After debridement, the tissue was sutured. Follow-up laboratory revealed ABGA, electrolyte, CBC, urinalysis all within normal range. Chest PA was normal. After that event the patient was discharged after 2 hours observation. During the observation, we checked an ECG, saturation, endtidal Co₂. These were all normal. At follow-up 2 weeks later the wound was cleaned. DISCUSSION: Previous case reports indicates hydrogen peroxide tissue injection results in tissue necrosis. It is a very rare case. If hydrogen peroxide is injected in tissue, rapid excision and debridement will be necessary. Like a digit, the penis, and earlobe will be more urgent because these parts are more susceptible to ischemia.

T216) Clinical Characteristics of Patients with Acute Organophosphate Poisoning Requiring Prolonged Mechanical Ventilation : Shin H. Jin¹ : 1. Emergency medicine, The Catholic University of Korea Uijeongbu St. Mary's Hospital, Uijeongbu, Korea, South.

INTRODUCTION: The major complication of acute organophosphate (OP) poisoning is respiratory failure as a result of cholinergic toxicity. Many clinicians find it difficult to predict the optimal time to initiate mechanical ventilation (MV) weaning, and as a result have tended

to provide a prolonged ventilator support period. The purpose of this study is to determine if any clinical predictors, based on patients characteristics and laboratory findings, to assist in the optimal timing of mechanical ventilator weaning can be identified. **METHODS:** We reviewed medical and intensive care records of 44 patients with acute OP poisoning who required mechanical ventilation admitted to medical intensive care unit between July 1998 and June 2007. Patient information regarding the poisoning, clinical data and demographic features, APACHE II score, laboratory data, and serial cholinesterase (chE) levels were collected. Based on the time period of MV, the patients were divided into two groups: early group (wean time <7 days, n = 28) and delayed group (7 days, n = 16). Patients were assessed for any clinical characteristics and predictors associated with the MV weaning period. **RESULTS:** During the study period, 44 patients were enrolled in this study. We obtained the sensitivity and specificity values of predictors in the late weaning group. APACHE II score and a reciprocal convert of hypoxic index but specificity (83.8%) is only APACHE II score. Also, the chE concentration ($\rho = -0.517$, $p = 0.026$) and APACHE II score ($\rho = 0.827$, $p < 0.001$) correlated with a longer mechanical ventilation duration. **CONCLUSION:** In patients with acute OP poisoning who required mechanical ventilation, a score of 17 or less on the APACHE II scoring system and decrements in cholinesterase levels on 1-3 days were good predictors of delayed MV weaning.

T217) Non fatal trichloroethylene ingestion in an aged woman : Massimo Zannoni¹, Giorgio Ricci¹, Rosalia Codogni¹, Marco Frisini², Paola Perfetti², Giampaolo Rocca² : 1. Clinical Toxicology Unit - U.O. Pronto Soccorso, Verona, Italy. 2. Azienda Ospedaliera di Verona, U.O. Pronto Soccorso OCM, Verona, Italy.

BACKGROUND: Acute TCE poisoning is due to ingestion, inhalation or sniffing. Rapidly absorbed in the lungs or GI tract TCE reaches target organs. The intoxication is often fatal due to cardiac arrhythmias, acute pulmonary edema or brain damages. **CASE:** An 88-year-old woman was admitted in the ED: she fainted with malaise, asthenia, sweating, cutaneous rash and catatonia. She had spilled TCE on herself 2 hrs earlier. She arrived unconscious (CSG 8), myotic, rigidity and incoordination. BP, O₂ sat., ECG and arterial gas analysis were normal. Clinical picture, symptoms, anamnesis did not agree: abdomen X-ray showed opaque material in digiunal loops, chest X-ray was normal. After gastric lavage to remove residuals and vaselina oil by nasogastric tube, she had therapy with n-acetylcysteine (NAC) 150 mg/kg iv in 90 min and then 300 mg/kg in 24 hrs for 3 days. The patient had complete recovery of consciousness in 3 days and was discharged after 8 days with no residual neurological, cardiac or respiratory defects. **DISCUSSION:** TCE accidental ingestion is easy also for relevant quantities. The most significant dangers of TCE are CNS depression or myocardial sensitization to the effects of catecholamines. Aged patients can have latent pathological conditions, compromised cardiac function so they are more sensitive to toxic effects of TCE. Also brain may have alterations or cerebral pathologies that enhance depressive effects of TCE. NAC, antioxidant, protects liver cells from damages, restores GHS and maintains adequate GHS levels, providing more substrate for detoxification. TCE is metabolized by cytochrome P450-dependent oxidation and conjugation with GSH. The first has higher activity and affinity than the GSH conjugation. Metabolites from the GSH pathway, responsible for toxic effects on the kidneys, are chemically unstable and highly reactive. But

you cannot directly extrapolate quantity of metabolite or a metabolic way to toxicity. The patient recovered CNS depression shorter than expected from toxicokinetics of TCE and its metabolites; cardiac performance, blood gases, liver and kidney function maintained normal. NAC therapy could lead to better and faster clearance of the TCE and favorable outcome.



Abdominal x-ray

T218) Frequency and accuracy of the diagnosis of delirium tremens in US EDs : Oliver L. Hung¹, Dennis Cochrane¹, Richard D. Shih¹ : 1. Morristown Memorial Hospital, Morristown, NJ, USA.

INTRODUCTION: The purpose of this study is to characterize frequency and accuracy of delirium tremens presenting to New Jersey (US) EDs. **METHODS:** The study design is a retrospective chart review of patients presenting to 15 area hospitals in New Jersey. All patient encounters with an ICD9 code for delirium tremens (291.0) from November 1, 1998, to October 31, 2008, were included in the study. There was no exclusion criteria. A convenience sampling of 400 available ED charts was reviewed to obtain demographic information including such as age and gender. The diagnosis of delirium tremens was also independently confirmed based upon evaluating the ED documentation. Confirmation of diagnosis was based upon modified ICD10 criteria for delirium tremens: including the presence of withdrawal state with apparent physical signs of withdrawal as well the presence of delirium. **RESULTS:** Of the over 6 million patient visits during the ED study period, 899 visits (0.015% of ED visits) were coded with the ED diagnosis of delirium tremens. Of the reviewed charts, the mean age was 47 years and 82% of patients were male. Recent alcohol use and withdrawal signs were confirmed in 93% and 83% of charts, respectively. 14% of charts contained the phrase "early delirium tremens" or "impending delirium tremens" in the diagnosis. Seizures were recorded in 14% of patient records with the diagnosis of delirium tremens. The diagnosis of delirium tremens could be confirmed based on chart documentation in only 7.3% of charts. **CONCLUSION:** Delirium tremens is an extremely rare presentation to New Jersey EDs. Emergency physicians appear to be over-diagnosing patients with delirium tremens. Considering the extreme rarity of this diagnosis, use of the term "impending or early delirium tremens" should be reconsidered and abandoned in favor of the less specific diagnosis of alcohol withdrawal.

T219) Acute Organophosphate and Carbamate Pesticide Poisoning in the Emergency Department of a Secondary Hospital : Juan Jose G. Martinez¹, Rosa Sousa¹, Caroline Dahlem¹, Olivia Costa¹, Luis Vega¹, Jorge Teixeira¹ : 1. Emergency, Hospital São Sebastião, Santa Maria da Feira, Portugal.

INTRODUCTION: Organophosphate and carbamate pesticide poisoning represent an important problem in both developing countries (where case fatality is commonly between 10 and 20%) and industrialized countries (where fatal cases represent less than 0,3% but the condition still persists as a public health problem). The aim of this study is to characterise the population of patients admitted to our ED with organophosphate or carbamate pesticide poisoning. **METHODS:** We have performed a retrospective review of the clinical data of all the patients admitted in our ED between 1st January 2004 and 31st December 2008 with evidence of organophosphate or carbamate pesticide poisoning. **RESULTS:** During this period 56 patients were admitted with this diagnosis: 36% were women and 64% men; 96% were intentional poisonings and all involved exposure by oral route. The average age was 50

years and the most frequent comorbidities were depression (55%) and alcoholism (12%). The most common compounds involved were Chlorfenvinphos (25%), quinalphos (11%) and clorpyrifos (9%); we could not identify the agent in 32% of the patients. At admission, the most frequent clinical features were muscarinic symptoms; only 15% of patients presented with simultaneous nicotinic, muscarinic and central nervous system effects. The average value of cholinesterase at admission was 1,7 U/mL (reference value: 5,1 – 11,7 U/mL). The average time for length of atropine therapy was 32,4 hours and of oxime administration 4,1 days. 54% of the patients needed mechanical ventilatory support for an average of 5,53 days. 7% of the patients died and 13% had relevant sequelae: tetraparesis, pulmonary fibrosis and psychiatric disorders. There were 3 cases of intermediate syndrome. **CONCLUSIONS:** Swift identification, atropinization and good supportive care are the standard management of severe cholinergic agent poisoning. Rapid and effective stabilisation and early antagonism of pesticide are fundamental to reduce the still high mortality.

T220) Memantine intoxication: A case report : Zikret Koseoglu¹, Özgün Kösenli¹, Cemgil Aydin Kazgan¹, Halit Fidanci¹ : 1. Adana Numune Education And Research Hospital ER, Adana, Adana, Turkey.

BACKGROUND: Memantine, an N-methyl-D-aspartate (NMDA) receptor antagonist has been found to be effective, both as monotherapy and in combination with donepezil, in the treatment of patients with moderate to severe stage Alzheimer's disease. Memantine has shown excellent safety and tolerability, with a frequency of adverse events similar to placebo. Memantine's most common side effects are agitation, accidental injury, dizziness, headache, urinary tract infection, insomnia, and confusion. **CASE:** We want to describe a case of a woman without a history of Alzheimer's disease taking 20 quantity, 10mg tablets of Memantine for self-poisoning.

T221) Inhalation of cypermethrin: Are you pancreatitis? : Zikret Koseoglu¹, Fatma Comert¹, Ilkay Citak Tuna¹, Özgün Kösenli¹ : 1. Adana Numune Education and Research Hospita ER, Adana, Turkey.

BACKGROUND: Pyrethroid insecticides have been widely used in pest control. Pyrethroid insecticides produce neurotoxicity by prolonging the opening of sodium channels. **CASE:** A 57 year-old male presented to the emergency department with a history of inhalation of cyper-killer insecticide, which includes cypermethrin. He presented with abdominal pain and vomiting. The dermal toxicity of pyrethroids is further limited by low absorption through the skin. In man bioavailability of dermal pyrethroid is about 1%. The dermal route of exposure presents little risk of systemic poisoning but in our case, as seen, systemic poisoning and pancreatitis occurred.

T222) Organophosphate injection in the arm: A case report : Zikret Koseoglu¹, Ilkay Citak Tuna¹, Fatma Comert¹, Özgün Kösenli¹ : 1. Adana Numune Education And Reserch Hospital ER, Adana , Turkey.

BACKGROUND: Due to the widespread use of insecticides, organophosphate intoxications are encountered often. These group of drugs are commonly used because of positive effects in production of the agricultural sector. They also cause chemical poisoning because they are commonly available, and not controlled, resulting in self poisoning and accidental poisonings. For these reasons they become a part of the poisoning cases seen at the emergency services.

CASE: In this study we reported a case who injected Dichlorvos into his left arm to commit suicide. We reported this case because it is an usual and interesting way of intoxication. An 18 year-old male patient injected DDVP-EM50 which includes Dichlorvos, to his left arm antecubital region in a suicide attempt, and 6 hours later, he presented to emergency services. On the patient's left arm there was edema, pain, and erythema. The patient had systemic organophosphate intoxication signs and pseudocholinesterase level was 400. Organophosphate poisoning antidote therapy was initiated. On day 5, local inflammatory signs decreased, and we discharged the patient.





T223) Rectal foreign bodies: a report of five cases : Atilla Akova¹, Zikret Koseoglu¹, Özgün Kösenli¹, Adnan Kuvvetli¹, Koray Das¹ : 1. Adana Numune Education And Research Hospital Er, Adana, Turkey.

Foreign materials were detected in the rectum in five male patients with ages ranging from 20 to 66 years. The materials were soda bottles in two cases, glasses in two cases, and shower nozzle in one case. They were extracted with the patients in lithotomy position after anal dilatation, under general anesthesia in four cases. The other patient presented with acute abdominal signs and had a diagnosis of rectal perforation. He underwent transanal rectal suture repair with proximal fecal diversion. No procedure-related complications occurred and the patients whom the foreign materials were extracted from were discharged 24 hours after the operations. The other patient with diversion colostomy was operated on 3 months later for colostomy closure.



T224) POISONING WITH SUPRAZATUAR MESALAMINE RECTALLY AND ORALLY : Zikret Koseoglu¹, Salim Satar¹, Özgün Kösenli¹, Ahmet Sebe¹, Fatma Comert¹ : 1. Adana Numune Education And Research Hospital ER, Adana, Turkey.

Drugs that contain 5-ASA used for inflammatory bowel disease are more common than the last half centuries, but overdoses are not reported in the literature. In this case, a 20 year old male patient who took 14,5 gr mesalamine rectal and oral for suicide is discussed along with review of current literature.

T225) Review of Multi-Exposure calls to a Regional Poison Control Center : Brent W. Morgan¹, Robert Geller², Arthur Chang¹, Carl Skinner², Richard Kleiman² : 1. Emergency Medicine, Emory University, Atlanta, GA, USA. 2. Georgia Poison Center, Atlanta, GA, USA.

INTRODUCTION: Poisoning events, including exposures to hazardous materials, can involve multiple victims. Regional poison centers often are contacted in such events

involving multiple victims. There is no research about the epidemiology of these multiple exposure calls. **METHODS:** We searched our poison center database over a 9 year time period for all calls involving a poisoning event in which more than 2 people were exposed to the same substance. We then matched each product to the generic category used for the National Poison Data System (NPDS). We analyzed this data to find the most frequent substances reported as primary substances in these multiple exposures. **RESULTS:** We identified 6695 calls between 2000 and 2008 that had more than 2 people exposed to the same substance. In these calls, 25,926 people were exposed (4.76% of the 544,267 human exposure calls for this period). These calls involved 64 of the 67 NPDS substance group codes. Some substances were much more commonly involved than others. Table 1 lists the 10 most common substances involved. Of the patients exposed, 69.4 % were not followed due to minimal effects possible or judged as nontoxic, 0.3% had major effects, 8.6% had no effects, and 9.3% had minimal to moderate effects. Six people died. **Discussion:** This study highlights the number of calls that poison centers receive involving multiple people exposed in the same event. Fumes/Gases/Vapors make up the majority of these calls. This may have implications in the training of poison center staff and in the continued education of the public in safety of different products. The overall mortality from multi-exposures, based on poison center calls, is low. **CONCLUSION:** Fumes, gases, and vapors make up the majority of multi-exposure calls. Analysis of these calls can help poison centers better understand these events and then direct training to prepare their staff for such calls.

Table 1: Frequency of Substances Involved in Multi-Exposure Calls

Call/Substance	Frequency (%)
Fumes/Gases/Vapors	22
Food Products/Food Poisoning	9
Pesticides	9
Bites and Envenomations	7
Chemicals	6
Hydrocarbons	5
Cleaning Substances (Household)	5
Information Calls	5
Foreign Bodies/Toys/Miscellaneous	4
Plants	4

T226) SODIUM THIOSULFATE IN EYE CAUSTICATIONS : Giorgio Ricci¹, Massimo Zannoni¹, Rosalia Codogni¹, Giulio Trecco², Elisa Bonello², Francesco Praticò², Giampaolo Rocca² : 1. Pronto Soccorso O.C.M., Clinical Toxicology Unit, Verona, Italy. 2. U.O. Pronto Soccorso-Azienda Ospedaliera, Verona, Italy.

INTRODUCTION: The objective of this study was to evaluate the effectiveness of sodium thiosulfate in eye alkali caustications. Compounds with a basic pH like sodium hypochlorite

are potentially even more damaging to the eye than strong acids. Eye exposure to chlorine bleaches is associated with a burning sensation, tearing, erythema, redness, photophobia and blepharospasm. In the acute phase, depending on the extent of the injury, direct damage from exposure is observed in the cornea, adnexa, and possibly in the iris, ciliar body, and lens. The presence of strong hydroxide ions causes rapid necrosis. If the bleach is left on the eye for a long period, tissue necrosis may spread through the entire thickness of the corneal epithelium, possibly leading to irreversible damage and infection. **METHODS:** Recently we introduced a local irrigation with sodium thiosulfate after washing the injured eye. **RESULTS:** We treated 20 patients, admitted at our ED for sodium hypochlorite eyeburns, with a saline washing followed by application of 1-2 vials of sodium thiosulfate, measuring tears pH before and after the procedure and continuing the irrigation until pH normalization. **CONCLUSION:** Approximately 2 to 3 weeks after alkali burns, damaging ulceration of the corneal stroma often occurs, related to inflammatory infiltration of polymorphonuclear leukocytes and fibroblast and the release of proteolytic enzymes. Sodium thiosulfate ($\text{Na}_2\text{S}_2\text{O}_3$) is a thiol group donor that reacts with sodium hypochlorite forming sodium chloride and sodium sulphate, both harmless for the patient. Local application may cause a mild burning sensation which is not a contraindication to its use. All 20 patients treated with local irrigation of sodium thiosulfate had optimal results, avoiding permanent sequelae: by inactivating the mechanism that leads to colliquative necrosis, the eye irrigation with sodium thiosulphate is a useful procedure, which may sensibly improve the outcome of eye alkali caustications.

T227) STRAWBERRY AND FISH: TASTE THE DIFFERENCE! : Giorgio Ricci¹, Massimo Zannoni¹, Costantino Caroselli², Francesco Praticò², Paola Perfetti², Rosalia Codogni¹, Giulio Trecco², Giampaolo Rocca² : 1. Clinical Toxicology Unit - Emergency Department, Ospedale Civile Maggiore, Azienda Ospedaliera di Verona, Verona, Italy. 2. Emergency Department, Ospedale Civile Maggiore, Azienda Ospedaliera di Verona, Verona, Italy.

INTRODUCTION: Allergic reactions are an important cause of admission to the ED. They are often phenomena of mild to medium intensity, but frequently severe reactions up to anaphylactic shock are observed. In our ED, in addition to supportive care, we determine tryptase serum level which is an interesting marker in subjects at risk of anaphylaxis. In this survey, we analyze the role of tryptase in order to differentiate real allergic syndromes from other syndromes causing similar effects with a different mechanism, avoiding diagnostic errors that might cause therapeutic difficulties, as in the case of Scombroid syndrome (Histamine Fish Poisoning – HFP), a complex of symptoms due to biogenic amines, mainly histamine, contained in fishfoods. **METHODS:** In this study, we observed 50 patients with allergic reaction and 10 with HFP trying to correlate serum tryptase levels with the severity of clinical presentation and medical history. **RESULTS:** We noted that in case of certainly determined allergic reactions (insect stings, drugs, etc.), tryptase levels increased to varying degrees, while in case of HFP (symptoms onset within minutes to hours after fish ingestion, developing a severe histamine-mediated reaction, without a history of previous allergic reactions), tryptase levels were unchanged.

CONCLUSION: Recognizing HFP can be extremely difficult, especially in the ED. Although the treatment is basically the same as that for allergic reactions, however other drugs and even gastric lavage may be useful to solve symptoms in HFP. In addition, according to Italian

legislation, HFP must be notified to authority. We also tried to define a scheme of recommended treatment according to the different pathophysiological mechanisms of the two syndromes, suggesting a long term follow-up in case of HFP, considering that this illness is not a simple poisoning from histamine.

T228) Seizures in Poisoned Hospitalized Patients in the Emergency Medicine Department : Hojjat Derakhshanfar¹ : 1. Emergency Medicine, SBMU, Tehran, Tehran, Iran.

INTRODUCTION: Poisoning is one of the major causes of seizures in emergency medicine. Because of differences in the availability of drugs in different areas and lack of enough control on purchase and sale of some dangerous industrial substances, the causes of seizure in poisoned patients may be different in our society from others. Therefore the relative distribution of seizures in poisoned patients were evaluated. **METHODS:** The study was retrospective and analytic-descriptive. Sex, age, type of poisoning product, seizure, type of seizure, drugs controlling seizure and outcome from records of 1282 poisoned hospitalized patients during 2006-2008 in poisoning emergency department were evaluated. **RESULTS:** Related distribution of seizure was 5.3%. The most common causes of seizure were tricyclic antidepressant (TCA) (39.5%) organophosphates (17.7%), carbamazepine (7.7%) and organochlorines (6.5%) poisoning respectively. However, status epilepticus was more common in organochlorines (25%), organophosphates TCA (18.75%) and carbamazepine (12.5%) poisoning. There was a negative relationship between age and type of seizures. Seizure had no relationship with previous history of seizure. Midazolam alone (25%) or in combination with sodium thiopental (12.5%) was the best drug for controlling seizures. 26.25% of patients didn't have complications. Mortality rate was 37.5%. **CONCLUSION:** Difference in incidence of seizure in our study compared to other studies could be due to differences in availability of drugs and toxins. Midazolam may be the drug of choice for treatment of status epilepticus in poisoning.

T229) Margarine to remove paint from a young girl's face : Kyung Hwan Kim¹, Jun Seok Park¹, Ah Jin Kim¹, Jun Young Roh¹, Dong Wun Shin¹ : 1. Emergency Medicine, Inje University Ilsan Paik Hospital, Gyeonggido, Korea, South.

CASE: A 22-month-old girl presented to the Emergency Department with a paint on her face, which she accidentally poured on herself after touching a paint can on an upper shelf. The black oil based paint was covering her face and upper body. We applied margarine to remove paint while rubbing it and cleansed it safely and completely. After otorhinolaryngology and ophthalmology consultation, she was admitted for observation for possible hypersensitivity reaction. Two days after admission, she went home without complications and symptoms. **DISCUSSION:** Kerosene, thinner and acetone have been used as a paint remover. If the kerosene was applied to this girl, her face, eye, ear, nasal tissue might have been damaged. We knew that margarine is reported as a superglue remover instead of kerosene. Margarine is made from any of a wide variety of animal or vegetable fats, and is often mixed with skimmed milk, salt, and emulsifiers, which is non-toxic, edible and a good source of high-molecular weight oils. So we safely applied margarine to her and got a successful result. After

that incident, we searched MEDLINE using 'Paint' as a keyword. We found a case that Citrus oil removed paint from burnt skin. In the text, we found information about hot tar, something alike and something different. Hot tar is derived from long-chain petroleum and coal hydrocarbons. Polyoxylene sorbitan (polysorbate) contained in many antibiotic ointments is an emulsifying agent that can be used to remove tar. Industrial removal agents such as De-solv-it, a citrus and petroleum distillate, are also effective in tar removal. Mayonnaise has been reported as a home remedy used topically in a similar fashion. Mayonnaise is a flavor made primarily from vegetable oil and egg yolks. In our case, we found the margarine could remove paint on the face easily, producing no adverse effect. We suggest margarine as a paint remover on a case by case basis.

T230) AN UNUSUAL CASE OF SELF-INJECTIONS OF THINNER TO REDUCE JOINT PAIN RESULTING IN CHEMICAL NECROTIZING FASCIITIS : Rüstü Köse¹, Abdullah Ozgonul², Ozgür Sogüt³, Osman Bardakci², Mehmet Unaldi⁴ : 1. University of Harran, Department of Plastic and Reconstructive Surgery, Sanliurfa, Turkey. 2. University of Harran, Department of General Surgery, Sanliurfa, Turkey. 3. University of Harran, Department of Emergency Medicine, Sanliurfa, Turkey. 4. Research and Training Hospital of Kartal, Emergency Department, Istanbul, Turkey.

BACKGROUND: Self-injection with thinner is a rare but serious injury. Adverse effects of parenteral thinner injection such as cellulitis and sterile abscess have been associated with the necrotic effects of hydrocarbons. Acute intoxications via intrathoracic, intravenous, intramuscular or subcutaneous (SC) injections of thinner for attempted suicide have been reported in the literature. Thinner injections to relieve joint pain has not been reported to date. Herein, we describe a case of a 47-year-old man who presented with chemical necrotizing fasciitis after SC thinner injections into different parts of his body in order to eliminate joint pain due to ankylosing spondylitis. **CASE:** A 47-year-old male was admitted to the emergency department (ED) complaining of pain, swelling and induration of the right arm, anterior side of both shoulders, both thighs laterally and the posterior wall of the thorax. Upon physical examination, fistulization and skin necrosis at the posterior aspect of the chest wall were noted (Figure 1). Thinner injections were performed by the patient for the relief or reduction of diffuse joint pain. Furthermore, the patient was found to be receiving treatment for ankylosing spondylitis for the last 27 years, with unbearable pain of his joints. The patient was brought to the operation room for immediate fasciotomy. After skin incisions through the right arm of the patient, purulent and necrotic material was emanated from the wound (Figure 2). Approximately, 2000 ml of pus was aspirated from all the injection sites. Microbiological studies of deep tissue samples remained sterile. All of the wound sites were dressed daily for 15 days and subsequently closed with secondary suturing. The patient was discharged with complete remission on the 38th day post-operatively.

DISCUSSION: Chemical necrotizing fasciitis following thinner injection can be treated in the subacute period. Urgent surgical interventions should be considered in the presence of compartment syndrome and symptomatic arterial thrombosis.



Fistulization and skin necrosis are seen at the back of the patient on admission.



Drainage of pus examining at the right arm of the patient after skin incisions.

T231) Toxic consumption: What has changed and what we can improve? : Antonio German¹, Gema Muñoz¹, Rosa Mira¹, Elena Rodríguez¹, Juan José Cara¹, Laura Lozano¹ : 1. Hospital Universitario Mutua de Terrassa, Terrassa, Barcelona, Spain.

INTRODUCTION: Our objectives were: to describe those substances whose consumption leads to consultation in our emergency department nowadays; to identify possible changes in the substances profile in the last 12 years; and to identify gaps for improvement in the quality of care offered to these patients. **METHODS:** All the episodes identified as "substance abuse" in the Emergency Department at the Hospital Universitario Mutua de Terrassa, from 1st April to 30 September, 2008 were reviewed. Demographic data and the type of toxin were collected and compared with a second cohort of 100 episodes randomly selected from 1995 and 1996. In addition, in the 2008's cohort, all the data directly related to the quality indicators for emergency care of patients with acute intoxication from the Spanish Association of Toxicology were also collected. **RESULTS:** 323 episodes were detected in 2008 (more than one substance, in 24%). Table 1 shows the data comparing the frequencies of the substances

between 2008 and 1996. In regards to the structural indicators of quality of care, there was an updated acting protocol for every substance, antidotes were available and also the proper material in 100% of the cases. Regarding the functional indicators, 45% of the patients had their first attention before 15 minutes, digestive decontamination was correctly indicated in 14%, flumazenil administration was inadequate in 56% and 50% for naloxone. 66% of the patients consuming a cardiotoxic had an EKG done. The mortality rate was 0%.

CONCLUSIONS: Consultations for alcohol abuse and cocaine have increased in the last 12 years, while those consultations due to anti-inflammatory drugs, neuroleptics, tricyclic antidepressants are less frequent. According to CALITOX 2006, our center meets the structural indicators but not the functional ones. Specific improvement measures are needed.

TOXIC, N(%)	2008 N=421	1995-6 N= 141	P
ALCOHOL	169 (40)	8 (6)	0.001
BENZODIAZEPINES	100 (24)	37 (26)	0.57
MORPHICS	20 (5)	9 (6)	0.509
COCAINE	31 (7)	3 (3)	0.024
CANNABIS	9 (2)	0 (0)	0.121
ANPHETAMINES	8 (2)	2 (1)	1
CARBONIC MONOXIDE	21 (5)	13 (9)	0.1
ANTI-INFLAMMATORY DRUGS	5 (1)	11 (8)	0.001
NEUROLEPTICS	3 (1)	8 (6)	0.001
TRICICLIC ANTIDEPRESSANTS	1 (0)	14 (10)	0.001
CLEANING PRODUCTS	11 (3)	8 (6)	0.1
OTHERS	43 (10)	28 (20)	0.005

T232) Ongoing debate on Dipyrone: great killer or as innocent as any drug? Two case reports presenting rare and life-threatening adverse effects of dipyrone. : Ozlem Yigit¹, Secgin Soyuncu¹, Ali Vefa Sayrac¹, Alp Giray Aydin¹ : 1. emergency department, akdeniz university, Antalya, Turkey.

BACKGROUND: Dipyrone is a potent analgesic and antipyretic drug that has been used clinically for more than 80 years. In some parts of the world, it has been banned because of its association with agranulocytosis. In Turkey dipyrone is available in oral tablet, drop and syrup, rectal suppository and injectable ampule forms and almost all forms are cheap in price.

CASES: We report two different cases that presented with rare but life-threatening adverse effects of dipyrone. First case is a 63-year-old woman who presented to the emergency department with fever. She had neutropenia after taking a 500 mg oral dipyrone tablet and following further evaluation was diagnosed with dipyrone induced agranulocytosis. The second case is a 70-year-old man who presented to the emergency department with diffuse erythematous skin rash after dipyrone injection and was diagnosed with toxic epidermal necrolysis associated with dipyrone. **DISCUSSION:** To use or not to use dipyrone is very

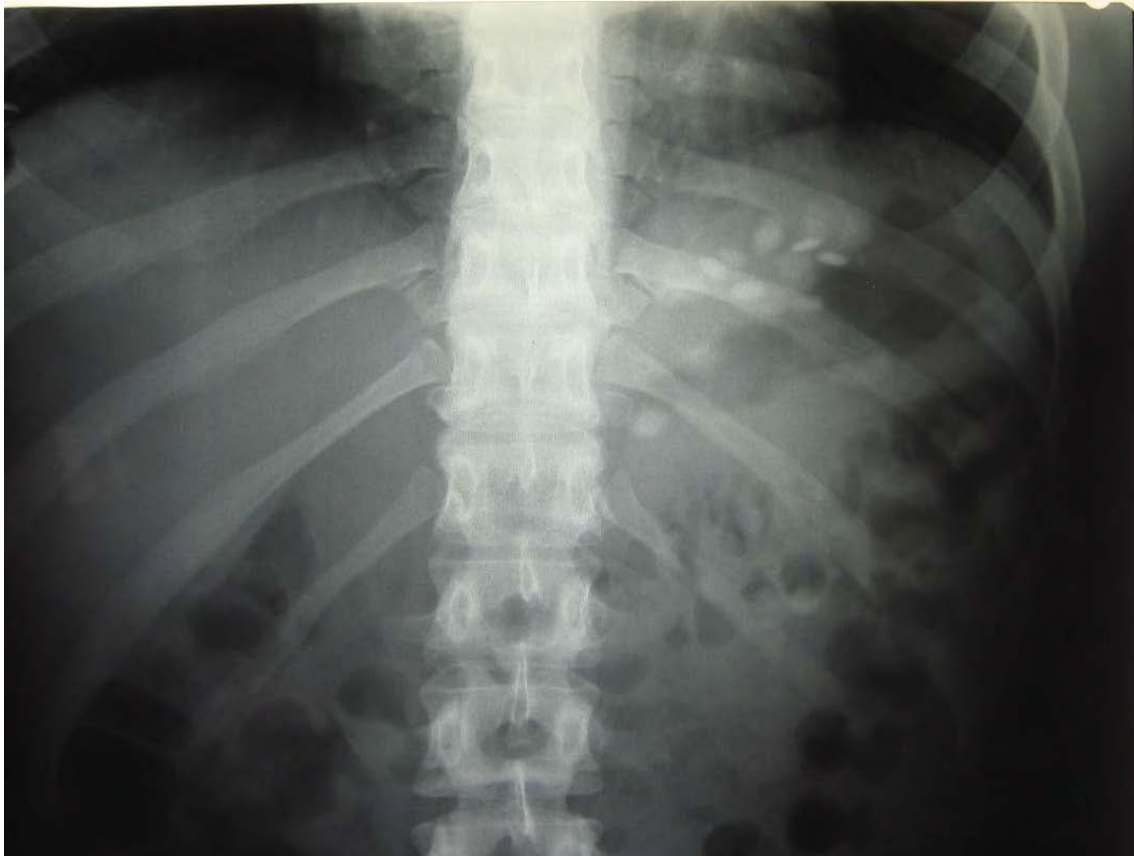
controversial and a great debate is going on. Dipyron supporters think that the drug offers a good analgesic efficacy profile with acceptable safety. They believe that there are strong negative emotions in spite of weak rationale, especially with regards to dipyron induced agranulocytosis, and suppose some rumors about the ban of the drug. However, agranulocytosis is not the only life-threatening risk with dipyron as was seen in our second case. Immune reactions such as anaphylaxis and TEN are quite serious problems and this fact impedes the underestimation of the dangers of the drug. The balance between the benefit and harm is particularly important for developing countries where dipyron may be the first-line analgesic, and where other drugs may not be readily available.

T233) Suxamethonium and Propofol: An Unusual Combination for Attempted Suicide : Gabrielle O'Connor¹, John J. O'Donnell¹ : 1. Emergency Department, Galway University Hospital, Dublin , Ireland.

CASE: We present an unusual case of deliberate self poisoning in a 22 year old male hospital porter. The patient self-injected a mixture of suxamethonium and propofol into his left antecubital fossa and subsequently had a period of loss of consciousness. His father found him collapsed at home. On arrival to the Emergency department, he was asymptomatic, but still expressed suicidal ideation. **DISCUSSION:** This is the first reported case of deliberate self poisoning with a mixture of suxamethonium and propofol, as far as the authors are aware. There are 2 documented cases of suicide with excessive amounts of propofol. The literature also shows a case of serial homicide by injection with suxamethonium alone. This case highlights the need for appropriate drug storage and also the need to be cognisant of staffs' mental health in critical care areas.

T234) Hook, line and sinker: Emergency endoscopy for iron overdose : Finn Coulter¹, Yee C. Kwang², Michael A. Murray² : 1. Emergency, Cork University Hospital, Cork, Cork, Ireland. 2. Royal Hobart Hospital, Hobart, TAS, Australia.

BACKGROUND: To our knowledge, this case presents the first report of early endoscopic intervention combined with desferrioxamine infusion for treatment of acute iron overdose. We believe the combination led to early normalisation of iron level and an uncomplicated recovery. **CASE:** A 19 year old girl was brought to the Royal Hobart Emergency Department after ingesting 22 controlled release iron sulphate tablets and 3200mg of erythromycin. Gastric lavage was performed. A subsequent abdominal X-ray showed multiple whole tablets still in the stomach. Given the high serum iron level and the persisting gastric tablets, gastroscopic retrieval was undertaken in the resuscitation room of the emergency department. Eight tablets were retrieved from the fundus of the stomach. A desferrioxamine infusion was commenced, due to the likely toxicity of iron overload. The patient's serum iron level continued to fall rapidly after the intervention, reaching normal levels within 11hrs. She was discharged from the hospital the following day with regular esomeprazole. **DISCUSSION:** We recommend urgent endoscopic gastric decontamination for tablet overdose based on criteria stipulated within our study.



Plain gastric radiograph demonstrating the residual iron tablets after lavage

T235) The Etiology of Patients Presenting to the Emergency Department with Carbon Monoxide Exposures in North Eastern United States : Renee Riggs², Fred Fiessler¹, David Salo¹ : 1. Morristown Memorial Hospital, Morristown, NJ, USA. 2. UMDNJ- Robert Wood Johnson Medical School , New Brunswick, NJ, USA.

INTRODUCTION: Carbon monoxide poisoning is the most common toxin encountered in the emergency department. This disease is elusive and with significant morbidity and mortality if undiagnosed. **Objective:** To determine the etiology of carbon monoxide exposures that present to the emergency department in north eastern United States. **METHODS:** Design: A multi-center retrospective ED cohort study. Setting: 23 NY/NJ ED's comprising academic, non-academic, urban, and suburban hospitals. Subjects: Consecutive patients with the ICD-9 primary diagnosis of "toxic effects carbon monoxide", evaluated from January 2001 to December 2006. A manual chart review was then performed for specific data points.

RESULTS: "Toxic effects of carbon monoxide" was diagnosed in 1136 patients, 1073 charts were available for analysis. Median age was 31 years (SD +/- 20) and males comprised 47%.

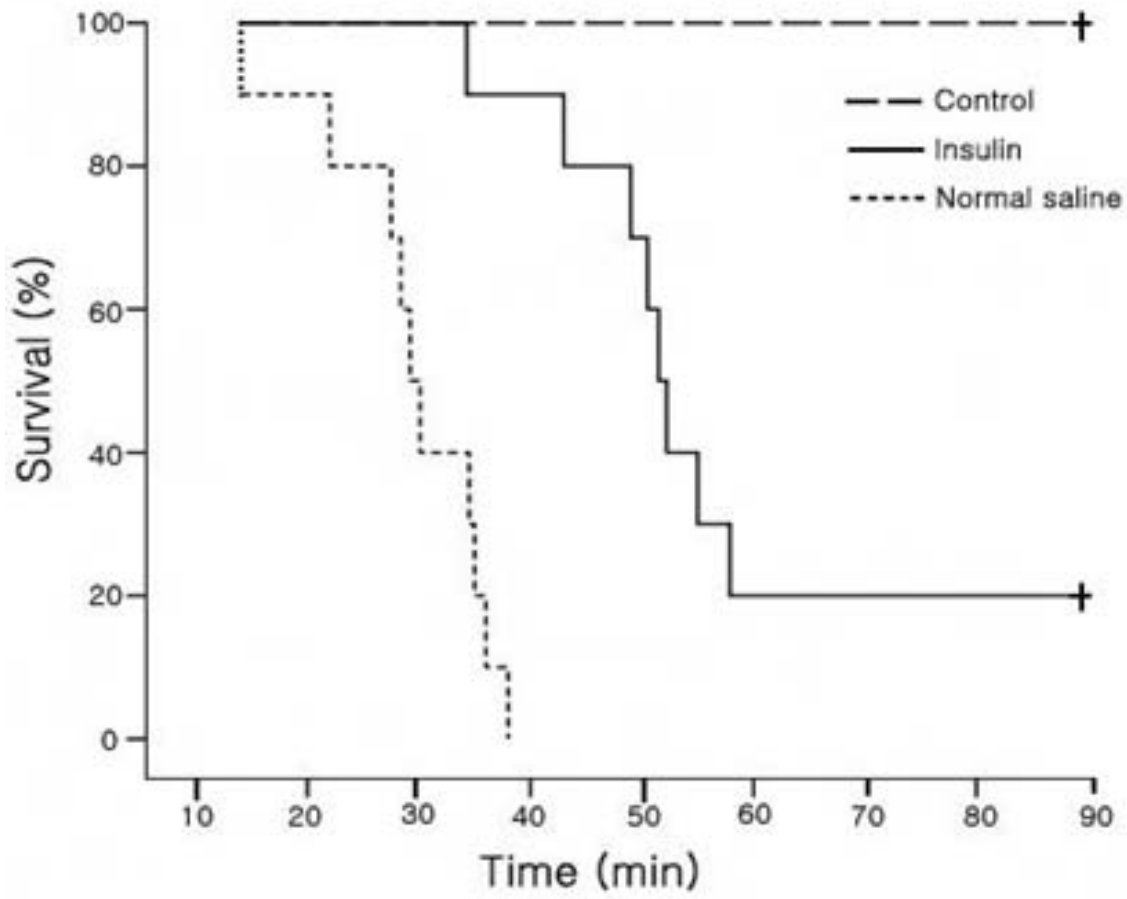
Pediatric comprised 31% (n=334). Admission occurred in 11% (n=124). Fifty-six were treated with hyperbaric oxygen therapy. Only two required intubation. Arterial draws were documented in 43% of documented case. Mean carboxyhemoglobin level was 6. Seventy-eight patients had carboxyhemoglobin level > 20. Regarding etiologies: 329 had a malfunctioning furnace, 251 arrived after a carbon monoxide detector alarmed, 114 were from automobile exhaust (of which forty-seven were determined to be intentional), 62 occurred secondary to fire, gas powered equipment caused 58 and 259 had an unknown source of exposure. CONCLUSION: The majority of exposures to carbon monoxide in our study population was secondary to furnace malfunctions and ultimately got discharged.

T236) Computed tomography grading for predicting esophageal stricture in caustic injury : Hyun Ho Ryu¹, Hyun Lee Kim² : 1. Chonnam national university, Gwangju, Korea, South. 2. Chosun university hospital, Gwangju, Korea, South.

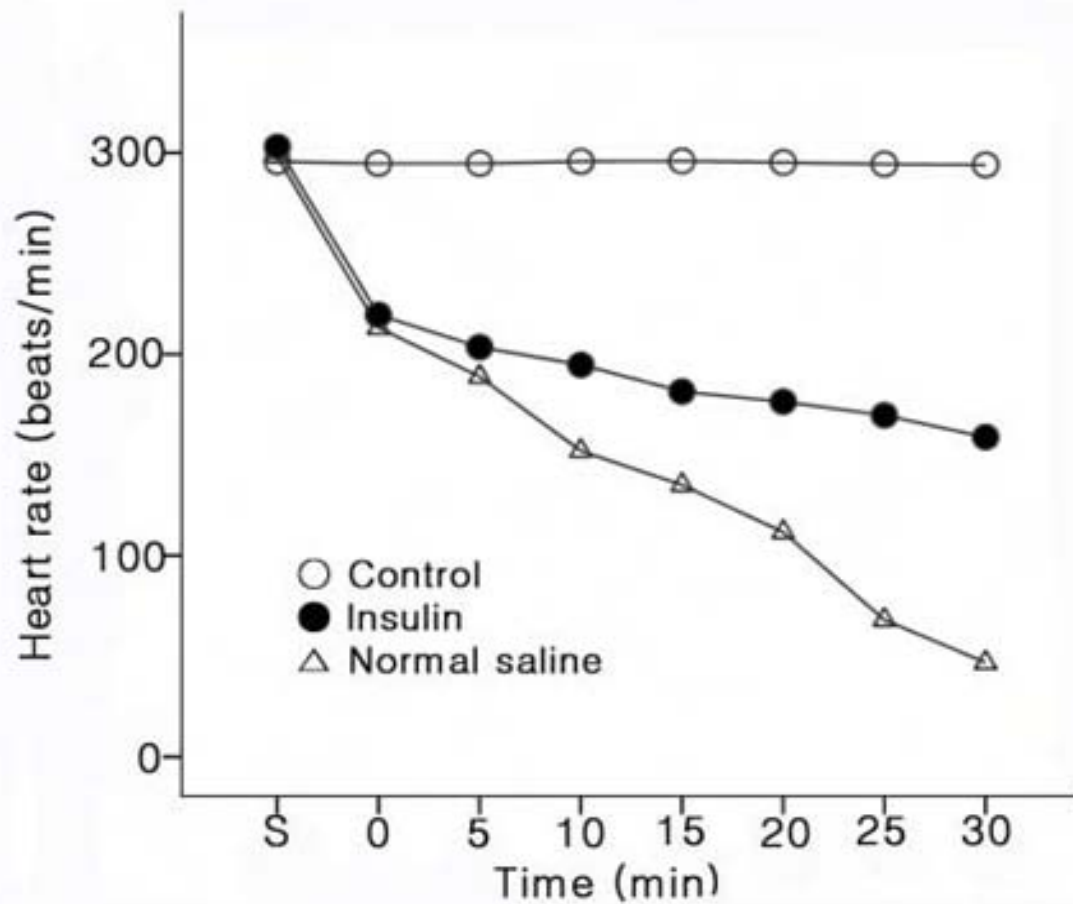
INTRODUCTION: Stricture is known as the key factor that determines the quality of life in patients who ingested caustics. It is known that a CT is a non-invasive modality which can promptly visualize the upper gastrointestinal tract both accurately and safely. Given this background, we performed a CT and then classified the degree of esophageal damage in patients who visited ER following caustic ingestion. METHODS: The current study was conducted in 41 patients who visited the ER following caustic ingestion during a period ranging from January of 1998 and August of 2008, in whom a retrospective analysis of medical records was performed. Based on the degree of esophageal wall edema and the damage present in the adjacent tissue seen on CT scans, the degree of esophageal damage was graded based on a scoring system. One of the late-stage complications, the presence of esophageal stricture was confirmed on esophagography. RESULTS: Our clinical series of 41 patients who ingested caustics consisted of 16 men and 25 women. The degree of esophageal damage following caustic ingestion was compared using CT. As the degree of esophageal damage got closer to grade IV, the more prevalent esophageal constriction became. This correlation was statistically significant ($p < 0.001$). Besides, other factors such as patient age, the presence of underlying diseases, the causes of caustic ingestion and the concomitant ingestion of alcohol did not have a significant correlation with esophageal constriction. Of the total 41 patients, 26 underwent endoscopy in the early stage after they visited emergency care center. An analysis of the correlation between the degree of esophageal damage seen on endoscopy and that seen on CT scans was performed. This revealed a significant correlation ($p = 0.002$, $r = 0.585$). CONCLUSIONS: An assessment of the degree of gastro-esophageal damage using CT, a non-invasive modality, in the early stage in patients who visited ER following caustic ingestion will be useful in predicting the occurrence of later-stage complications including esophageal constriction and the prognosis.

T237) Cardioprotective effect of insulin on acute propafenone toxicity : Hwaveon Yi¹, Jangyoung Lee², Yeongmo Yang², Seongyeop Hong² : 1. Daejeon health and science college, Daejeon, Korea, South. 2. Eulji University hospital, Daejeon, Korea, South.

INTRODUCTION: We recently observed a case of propafenone self-poisoning. The patient was recovered with intravenous insulin treatment. Actually propafenone is a sodium channel blocker but also has beta blocking and calcium channel blocking effect. Insulin is used for treatment of beta blocker or calcium channel blocker toxicity. The hypothesis was raised that insulin may have a cardioprotective effect in case of propafenone toxicity. We have therefore evaluated the effect of insulin on mortality and ECG abnormalities during acute propafenone toxicity in rats. **METHODS:** After measurement of basal mean arterial pressure, heart rates, PR interval and QRS duration, rats were given intravenous 36mg/kg/h of propafenone during 12 minutes to produce toxicity. Two minutes after the development of toxicity, rats (n=10 each group) received either normal saline solution (NSS group) or insulin with 50% glucose (Insulin group), maintaining administration of propafenone (36mg/kg/h) to respective rats intravenously until death occurred. 50% glucose (0.55mL/h) and insulin (100U/kg/h) was administered to keep the insulin group euglycemia. Rats receiving only NSS intravenously without propafenone toxicity served as control (n=10). Each group was observed for 90 minutes after treatment. Survival was considered as before there was no QRS wave. **RESULTS:** All of the insulin group survived, whereas 50% of NSS group were dead within 30 min after starting treatment (p=0.000). Survival of the insulin group was significantly superior to NSS group by log-rank test (p=0.000). Insulin prevented the decline of mean arterial pressure and heart rates (p=0.002, 0.005). It also prevented the increase of PR interval during 5-20 minutes and QRS duration 10-25 minutes (p<0.05). **CONCLUSION:** It was concluded that insulin had cardioprotective effect and it could be helpful for treatment of acute propafenone toxicity.



Survival of rats after treatment of propafenone toxicity.



Heart rates after treatment of acute propafenone toxicity

S: The starting point of propafenone toxicity

0: The starting point of treatment

T238) Effect of Alcohol Ingestion on Clinical Features of Acute Drug Intoxicated Patients : Seon Hee Woo¹, Woon Jeong Lee¹, Yeon Young Kyong², Kyu Nam Park², Se Min Choi² : 1. The Catholic university of Korea ourlady of mercy hospital, In Cheon, Korea, South. 2. The Catholic university of Korea , Seoul, Korea, South.

INTRODUCTION: This study was conducted to see the effect of alcohol ingestion on clinical features of acute drug intoxicated patients. METHODS: We prospectively investigated drug intoxicated patients who visited the emergency department 6 hours after acute poisoning from January 2004 to December 2007. Patients were classified into two groups according to serum

alcohol levels: an alcohol group (serum alcohol level >10 mg/dl) and a non-alcohol group. The type of toxic material, age, sex, duration of time to arrive to the emergency department (ED) after poisoning, mean arterial pressure, respiratory rate, base excess level, AST level, serum creatinine level, cause of poisoning, suicide attempt, past psychiatric history, discharge against medical advice rate, and admission rate were evaluated. The initial and final Poisoning Severity Score (PSS), the Glasgow coma scale, the length of stay in the intensive care unit (ICU), the usage of a mechanical ventilator, and death rate were also recorded. RESULTS: The study enrolled 222 intoxicated patients of which 75 fell into the non-alcohol group and 147 into the alcohol group. Alcohol ingestion of acute poisoning in males was higher than in females. The AST level and discharge against medical advice rate in the alcohol group were higher than the non-alcohol group. The base excess level, the length of stay in ICU, past psychiatric history rate, and admission rate in the non-alcohol group were higher than the alcohol group. The PSS were not correlated with alcohol consumption between the two groups. CONCLUSION: Alcohol ingestion is not associated with PSS. However, alcohol ingestion is commonly found in acute drug intoxicated patients. The discharge against medical advice rate in the alcohol group was higher than the non-alcohol group.

T239) Quetiapine Overdose Resulting in Bowel Infarction, Late Charcoal Aspiration and Death : Carson R. Harris¹, Samuel J. Stellflug¹ : 1. Emergency Medicine, HealthPartners/Regions Hospital, Saint Paul, MN, USA.

BACKGROUND: The atypical antipsychotic quetiapine is a widely prescribed medication with many well-described effects in overdose. Death, however, is rarely reported. We present a patient who developed bowel infarction and subsequently died following a large ingestion of quetiapine. We believe this to be the first such case reported. CASE: A 53-year-old male was found with altered mental status at home by his wife. He stated that he had taken all of his quetiapine (18 gm) in a suicide attempt. By the time paramedics arrived he was obtunded and required intubation. Upon arrival in the ED his blood pressure and temperature were normal. His ECG revealed HR 104/min, QRS 108 ms, and QTc 526 ms. He had normal glucose, basic metabolic panel, lactate, chest x-ray, and head CT. His urine drug screen for drugs of abuse was positive for benzodiazepines. Charcoal was administered through an OG tube, and whole bowel irrigation was begun. In the first 6 hours after the ingestion he developed hypotension requiring fluid and pressors. During the next 6 hours, he developed metabolic acidosis with a lactate of 8.5mmol/L. An abdominal CT scan revealed likely bowel infarction. He had a partial bowel resection shortly thereafter and his hospital course included 3 additional bowel surgeries. He unexpectedly aspirated charcoal during re-intubation 5 days after he received the charcoal in the ED. He expired on hospital day 16 with multi-organ failure. DISCUSSION: This patient displayed some of the common side effects of quetiapine, including altered mental status, tachycardia, QTc prolongation, and hypotension. He also developed intestinal infarction, a result previously not described in quetiapine overdose. He had no previous evidence of mesenteric ischemia, or vascular disease of any kind. Of note also in this case is the charcoal aspiration 5 days after administration. Conclusion: Quetiapine overdose can result in cardiovascular compromise severe enough to cause bowel infarction. Moreover, the risk of charcoal aspiration persists for many days, especially for ingestions that affect gastrointestinal

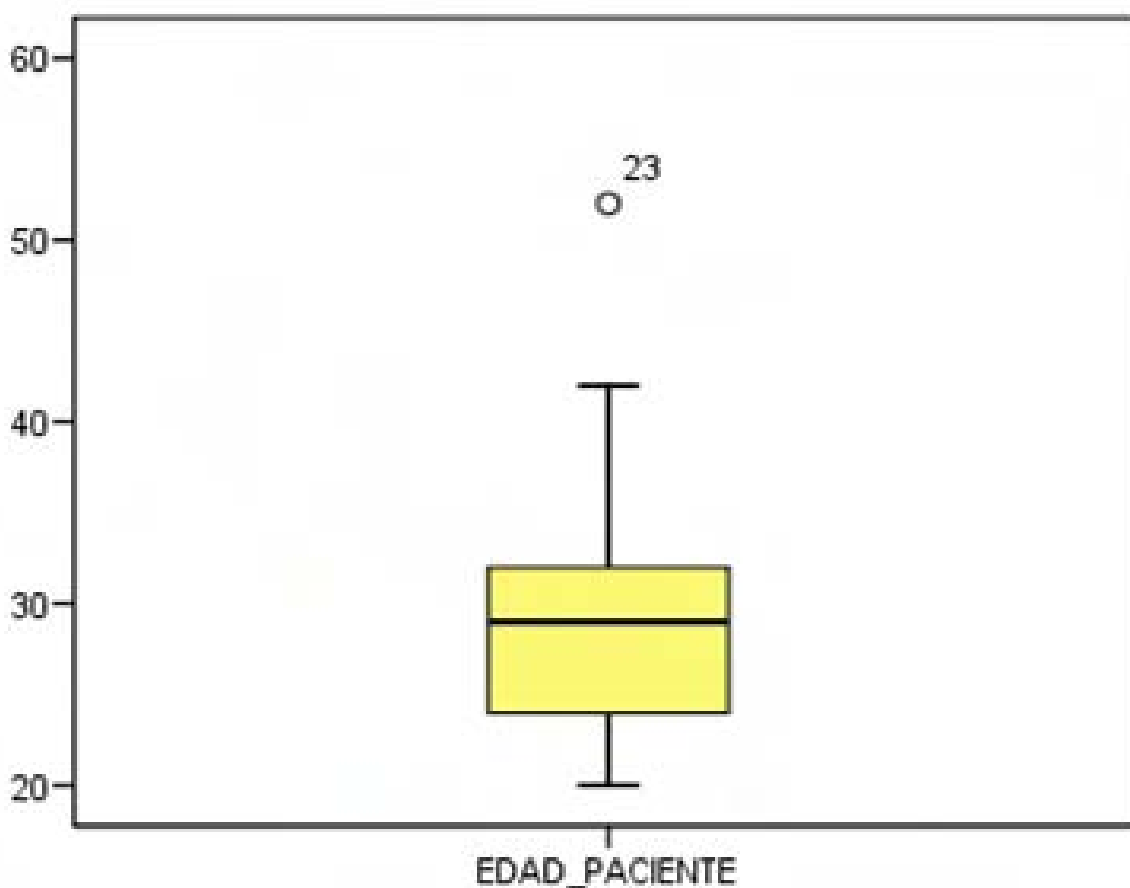
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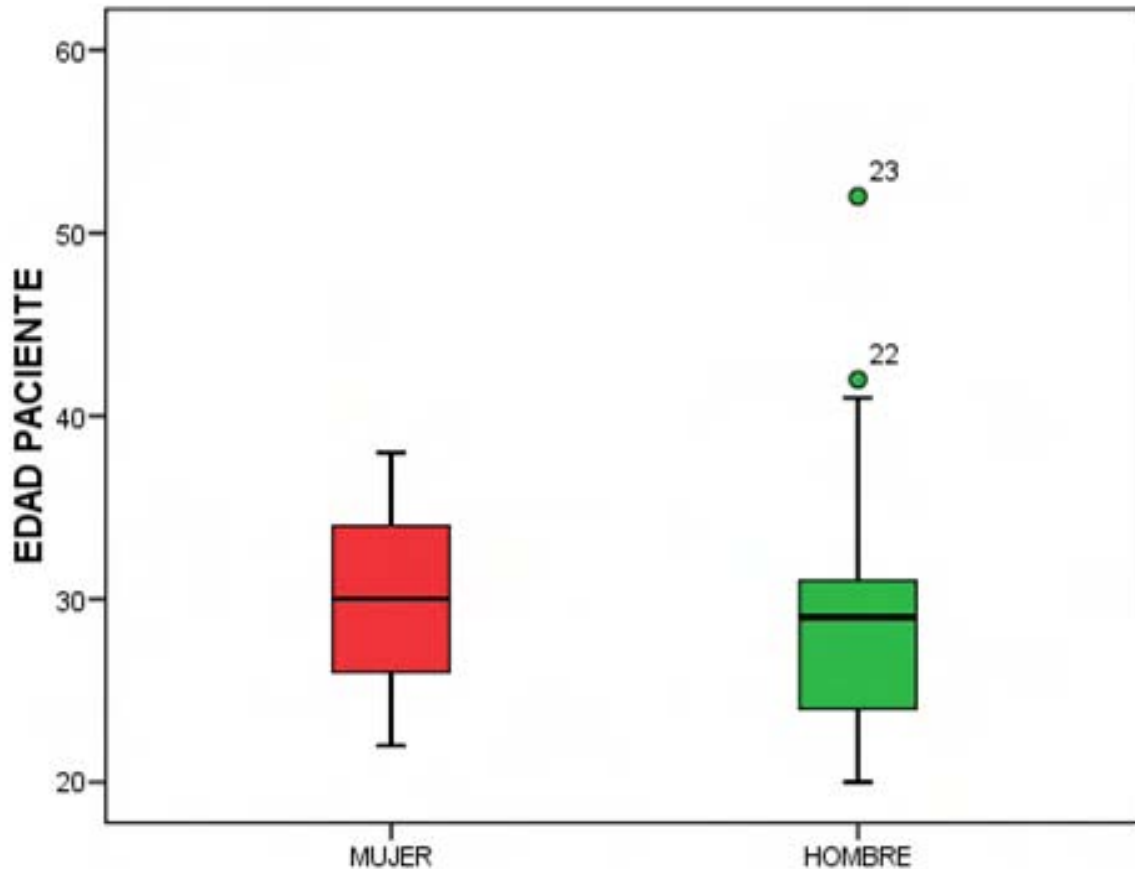
T240) Club drugs: an increasing tendency : David Caballos¹ : 1. SAMUR-PC Madrid, Madrid, Spain.

INTRODUCTION: Club drugs consumption and abuse is increasing in Spain according to the 2007 Drugs National Report. Among these substances GHB(Gamma hydroxy butyrate) also known as liquid ecstasy is responsible for coma in a high rate of patients. **METHODS:** Through a descriptive transversal retrospective study we have analyzed club drugs intoxicated patients in a critical situation (orotracheal intubation needed) from 2001 to 2007 in Madrid city.

RESULTS: 48 patients presented (45 male, 3 female/average age 29 years) with Glasgow score (85% below 9), Vital signs (29% bradycardia; 29% bradypnea; 33% hypoxia; 70% normal blood pressure). Orotracheal intubation (100%). Blood test laboratory results (52% acidosis; 62% high lactic acid). **CONCLUSIONS:** It is necessary to describe this emerging health problem in order to know the patient profile as well as the clinical effects caused by GHB,thus improving

the medical treatment of these patients mainly in the first assistance in pre-hospital emergency services.





T241) Anticholinergic syndrome in response to Lupin seed ingestion : Alberto Kurzbaum¹ : 1. Emergency Medicine, The Baruch Padeh Medical Center, Poria, Tiberias, Israel.

BACKGROUND Our objective is to describe a patient who presented with anticholinergic toxicity after eating lupin seeds that had undergone an incomplete debittering process that removes toxic alkaloids. This report is intended to alert physicians to the potential toxicity of edible lupins that are improperly prepared. **CASE:** A 35-year-old woman presented to the ED with blurred vision, dry mouth, nervousness, and malaise that started suddenly, about half an hour after she consumed a handful of lupin seeds. On examination, she appeared alert, uncomfortable and agitated. She was tachycardia at 120bpm, BP 123/90 mmHg, temperature 36.4°C and 98% oxygen saturation on room air. The oral mucosa was dry. The skin appeared normal. The pupils were dilated to 6 mm bilaterally, with minimal response to light and otherwise unremarkable physical examination. The electrocardiogram showed sinus

T243) A Case Of Arrhythmia Due To Dexmedetomidine Hydrochloride Infusion : Mediha Do?an¹, Dincer Yildizdas¹, Ozden Ozgur¹, Zeynep Kekec¹ : 1. emergency medicine, cukurova university medical faculty, Adana, yuregir, Turkey.

BACKGROUND: Dexmedetomidine hydrochloride, the S-(+)-enantiomer of medetomidine, is a selective alpha-2 adrenoreceptor agonist. In emergency rooms and intensive care units, Dexmedetomidine hydrochloride can be administered as a 24 hours intravenous infusion prior to endotracheal intubation, during the mechanical ventilation or for sedation. It is generally well-tolerated without depression of breath. Dexmedetomidine infusion may cause bradycardia and hypotension, and less frequently atrial arrhythmia (<1%), ventricular arrhythmia, atrio-ventricular block, ventricular tachycardia, supraventricular tachycardia, extrasystole, cardiac arrest. Therefore, patients should be monitored for cardiac rhythm and blood pressure during dexmedetomidine infusion. **CASE:** A 17 months child mechanically ventilated for hereditary axonal polyneuropathy developed tolerance to midazolam and fentanyl. As the patient developed abstinence syndrome, we started dexmedetomidine infusion. During the infusion of dexmedetomidine, the patient experienced second-degree atrio-ventricular block. The AV block recovered quickly following discontinuation of dexmedetomidine infusion and administration of atropine. **DISCUSSION:** In conclusion, it should be kept in the mind that cardiac arrhythmias may develop during dexmedetomidine infusion and thus, patients should be monitored for cardiac rhythm and blood pressure, and drugs and equipments, which may be required for intervention, should be kept available in the case of dexmedetomidine infusion.

W1) Penile fracture: an unusual ED diagnosis : Paola Perfetti¹, Alberto Gabrieli¹, Marco Cinquino², Giacomo Schenal², Francesco Praticò¹ : 1. Emergency Department, Ospedale Civile Maggiore, Azienda Ospedaliera di Verona, Verona, Italy. 2. Radiology Department, Ospedale Civile Maggiore, Azienda Ospedaliera di Verona, Verona, Italy.

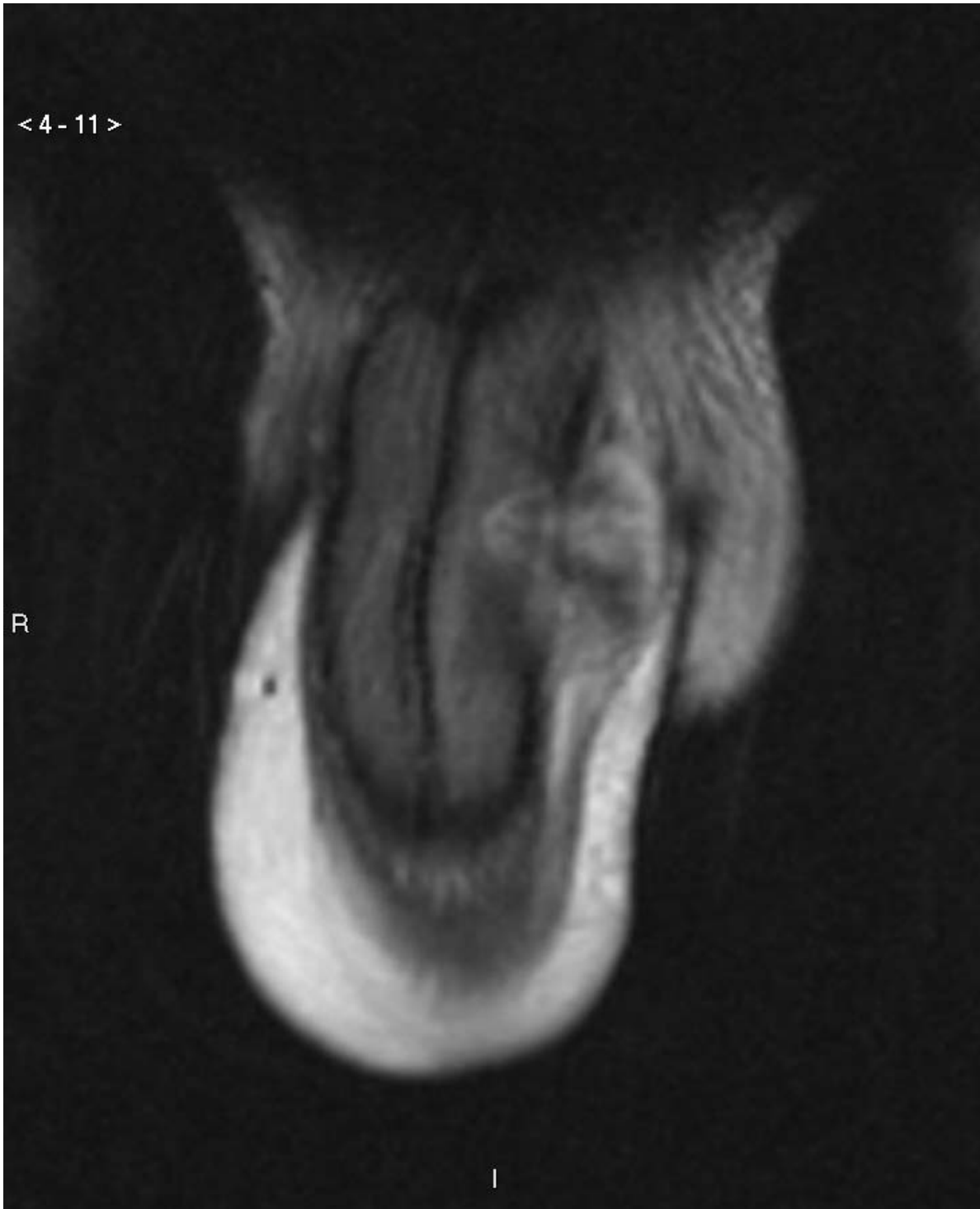
CASE: On April 2008 a 15-year-old man presented to the ED with acute penile swelling and pain after hearing a sudden snapping sound while turning over in bed at night. He denied any kind of trauma or sexual activity. Physical examination revealed a flaccid penis with ecchymosis along the penile shaft and a palpable hematoma on the dorsum of the penis. No “eggplant” deformity, penile deviation or perineal ecchymosis was noted. Testicles were normal. Urinalysis was negative for blood. US of the penis showed a tear in the tunica albuginea of the left corpus cavernosum and a 60 mm x 15 mm egg-shaped hematoma along the dorsum of the penis. MRI confirmed the diagnosis of penile fracture. The patient was admitted to the Urology Department and underwent immediate surgical repair with complete recovery.

DISCUSSION: Penile fracture is an uncommon but probably underreported urological

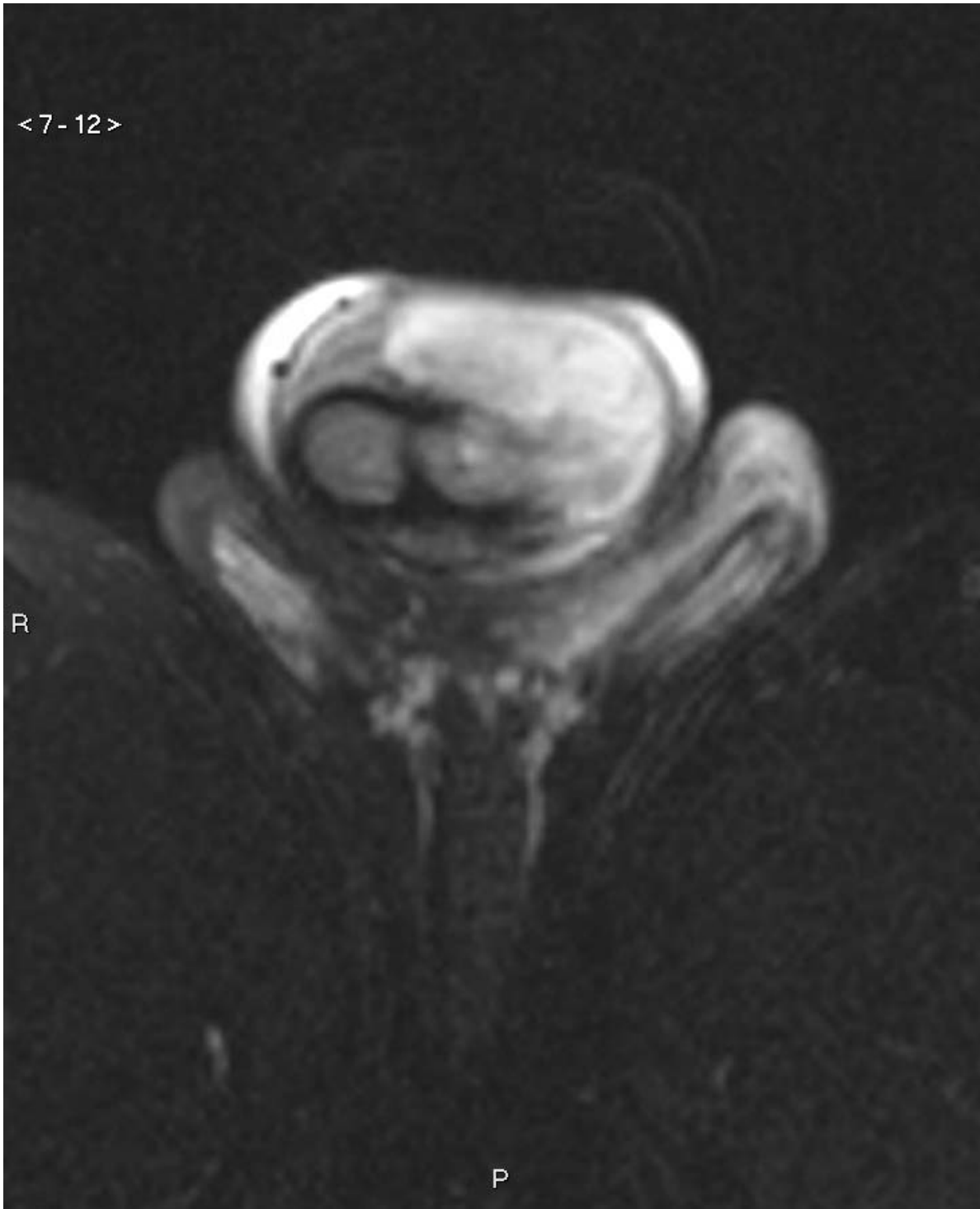
emergency that may have devastating physical, functional and psychological consequences. The pathological lesion is a tear in the tunica albuginea of the corpus cavernosum or spongiosum resulting in a hematoma formation and penile swelling. The most frequently reported mechanism of injury is blunt trauma during sexual intercourse or penile manipulation, especially masturbation. Other causes are falling onto an erect penis or even rolling over in bed during a nocturnal erection. Clinically, the patient hears a sharp, snapping sound followed by rapid detumescence, pain, swelling, ecchymosis, and deformation of the penis. The fracture occurs more often in the proximal shaft. Likewise, the right side is more often affected than the left. Typically the penis deviates to the side opposite the injury, producing an “eggplant” deformity. The differential diagnosis includes a tear of the deep dorsal vein of the penis. An accurate diagnosis can usually be based on history and clinical findings alone. US has a limited role because it is operator-dependent and interpretation depends on the examiner’s experience. MRI is considered the most accurate diagnostic and localising procedure. Prompt diagnosis and early surgical repair are essential to ensure a successful outcome with minimal complications.

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Coronal T2-weighted MRI shows a discontinuity in the tunica albuginea of the left corpus cavernosum.



Axial T2-weighted FATSAT MRI shows a discontinuity in the tunica albuginea of the left corpus cavernosum and a large hematoma along the dorsum of the penis.

W2) Cocaine is a pain in the gut: Experience of two cases at our institute. : Mohammed Mohsin Uzzaman¹, Adnan Alam¹, Manojkumar S. Nair¹, Romi Navaratnam¹, Luke Meleagros¹ : 1. General And Emergency Surgery, North Middlesex University Hospital, London, United Kingdom.

BACKGROUND: Cocaine is one of the alkaloids found in the leaves of Erythroxylon coca plant. It acts at the synaptic terminals where it reduces the neurotransmitter uptake of dopamine and norepinephrine. It is an increasingly used recreational drug in the UK and nearly 344,000 people are estimated to have used the drug. Cocaine can be taken orally, nasally or parenterally. Crack is a base-free form of cocaine, which can be smoked, as heating does not destroy it. There are many systemic effects of cocaine. The cardiovascular and neurological effects are commonly encountered and are widely published. In contrast, the gastrointestinal effects are less frequently encountered. However, there have been several case-reports recently, which have increased our understanding of the serious gastrointestinal effects of cocaine. This includes cases of ischemic colitis, hemoperitoneum and gastro-intestinal perforation after rupture in body packers. **CASES:** We present two case reports of patients that developed gastric perforation after smoking cocaine. Both cases presented to the emergency department (ED) at a busy London hospital in short succession (end of 2008). Case A was a 19-year old student who developed acute abdominal pain after smoking cocaine on a night out with friends. Case B was a 44-year old serial drug addict who also presented in the same way. Both patients required urgent laparotomy, oversewing of the gastric defect with an omental patch and thorough lavage. Subsequent post-operative recovery and investigations for other causes of gastric perforation including upper gastro-intestinal endoscopy was unremarkable. Case A was very unusual due to the location of the perforation on the upper-body of the greater curve. It is also the youngest age reported in current-literature. The perforation site for case B was typical, at the pre-pyloric junction. **DISCUSSION:** Cocaine-induced perforation is increasing and a high index of suspicion is required when assessing a young-patient presenting to the ED with unexplained, acute abdominal pain. Smoking “crack” cocaine is associated with a greater risk of gastrointestinal manifestations.

W3) Early identification of patients at risk of deterioration in a surgical ward : Charlotte Paltved¹ : 1. Surgery, Hospital of Koege , Koege, Denmark.

INTRODUCTION: Publications have identified deficiencies in the quality of medical care and the problems and risks of ward care. Staff awareness of deteriorating patients as well as management and timely intervention are frequently found to be inadequate, and earlier identification has the potential to improve outcome for these patients. **METHODS:** A needs assessment of the management of acutely and potentially critically ill patients has been carried out. The study design was interprofessional and consisted of a retrospective audit, focus group interviews with medical and nursing staff and full scale simulation in the ward. **RESULTS:** From the audit we identified the following problematic areas: Overall insufficient documentation; Unsystematic procedures and frequency of observations; Lack of re-evaluation when patients were deteriorating; Some patients in the ward with obvious physiological indicators of acute deterioration were overlooked or poorly managed. The focus group interviews revealed what common needs were identified as matters of concern: Identification

of patients at risk was often based on clinical judgment and not objective parameters; Lack of systematic observations; Need for interdisciplinary guidelines; Recognition of insufficient communication and teamwork in acute settings; Training and education of staff. In our test simulation we confirmed the results from the audit and the interviews and in CRM-terms we identified: Unclear communication; Lack of re-evaluation especially when patients were deteriorating; Risk of fixation error; Unstable leader- and followership.

CONCLUSIONS: We conclude that this form of multidisciplinary needs assessment provides a useful means of identifying issues for structuring a relevant multiprofessional educational programme.

W4) Scombroid poisoning in the emergency department : Costantino Caroselli¹, Francesco Manara¹, Giorgio Ricci¹, Luca Neri², Cynthia Caroselli³, Guglielmo Bruno⁴ : 1. Dipartimento di Emergenza e Accettazione, Ospedale Civile Maggiore, Verona, Italy. 2. SSUEm 118-Milano, Ospedale Niguarda Ca' Granda , Milano, Italy. 3. VA New York Harbor Healthcare System, New York, NY, USA. 4. Unità di Allergologia ed Immunologia Clinica, Università di Roma "La Sapienza", Roma, Italy.

BACKGROUND: Scombroid syndrome (Histamine Fish Poisoning) is a form of intoxication from eating fish. In Europe it still remains an underestimated problem and just a few cases are reported. Most cases arise from ingestion of scombroid species, which are dark fleshed, oily fish such as tuna, mackerel, skipjack and bonito. **CASE SERIES:** Seven cases of scombroid fish poisoning presented to our Emergency Department in 2008. The median age of the seven patients was 50 years (range: 21-60 years), 5 of them were females and 2 males. All the patients were apparently in good health conditions before this event. They had neither gastrointestinal disease nor had they experienced an allergic reaction. On admission all seven patients described the acute onset of a diffuse rash 15-40 minutes after scombroid fish ingestion (median time: 25 minutes). On examination all of them had a diffuse erythematous rash over the face, arms, legs and torso. Other symptoms included flushing, diarrhea, nausea, vomiting, tachycardia and pruritus in all of them. Three patients presented with dizziness and stomach pain. One of them had headache and another one had tongue oedema and hypotension. None of them had respiratory symptoms. Scombroid poisoning was correctly diagnosed by anamnesis, clinical signs and symptoms. Patients were successfully treated with corticosteroids (methylprednisolone) intravenously, antihistamines intramuscularly and intravenous anti-H2 (ranitidine). **DISCUSSION:** In Europe scombroid syndrome is an under-reported fish syndrome. Often it is confused with simple urticaria. It is hypothesized that incorrect manipulation and not promptly refrigerating susceptible fish can favour massive contamination of enteric bacteria like: *Escherichia coli*, *Proteus morgani*, *Proteus vulgaris*, *Morganella morgani* and *Hafnia alvei*. On admission it is important that the patient undergoes gastric lavage to remove fish pieces and administration of activated charcoal is recommended. Medical therapy with corticosteroids, antihistamines, fluids and oxygen administration must be considered. Correct diagnosis and timely treatment permitted an exact diagnosis and an effective therapy.

W5) Abdominal pain as a clinical finding delaying the diagnosis of testicular torsion: a child case report : Mehmet Dokur¹, Hakan Aksut¹ : 1. Kilis State Hospital, Kilis, Turkey.

BACKGROUND: Testicular torsion in the childhood period is the most serious cause of the acute scrotum. Clinical findings are usually localized to pain on the testicles and along the inguinal line, and nausea and vomiting. In some cases, there is a moderated pain that develops slowly; this may lead to diagnostic delay. **CASE:** A case male of 14 years old presented to our emergency service two times in the two last days with a persistent abdominal pain. Since the last night, a left testicular pain has been added to the persisting abdominal one. As his previous presentations, we considered a urinary infection; a prescription for that has been proposed. The physical examination findings observed in the last time he presented were compatible with unilateral testicular torsion. Via scrotal color doppler USG, a low flow was observed. The patient was diagnosed with testicular torsion; and, left testicular scrotal orchiectomy and right testicular fixation operations were performed. The patient was discharged after three day hospitalisation and was advised to come for a polyclinic control. **DISCUSSION:** Testicular torsion, because of its atypical presentations, can be misdiagnosed. So all children presenting to the emergency services with abdominal pain should be examined not only for the general purposes but also for the testicular torsion as well.

W6) A case of acute hemoragic pancreatitis in a patient with situs inversus totalis : Mehmet Dokur¹, Mine Kivrak¹, Baki Aydogan¹ : 1. Kilis State Hospital, Kilis, Turkey.

BACKGROUND: Situs inversus is a rare condition in which the major organs are reversed from left to right. Situs inversus presenting with acute pancreatitis is very rare. **CASE:** In this case presentation we analysed clinical features of a 16 year old male patient who presented to our emergency department with a situs inversus totalis phenomenon. Sudden epigastric and midline pain started the same day and physical examination findings were in line with acute abdomen syndrome. From his anamnesis, we learned that he had bronchial asthma. Through laboratory examination, amylase, CRP, billirubin, LDH and CK levels were found to be high. Findings of the contrast abdominal tomography were in accordance with situs inversus totalis and acute pancreatitis. In this case, there was free fluid and a generalised sensitivity intra abdominal space, so he was hospitalized and a diagnostic laparoscopy was planned. No findings of perforation throughout the laparoscopy were encountered in compliance with hemorrhagic pancreatitis. The case was provided supportive treatment throughout his hospitalisation and his vital findings maintained stability where his amylase levels became regular in 6 days. Our patient was discharged and was advised to come for a polyclinic control. **DISCUSSION:** Situs inversus totalis cases may be encountered with acute abdominal syndrome. If these cases are unable to be distinctively diagnosed from surgical acute abdominal syndrome, diagnostic laparoscopy will decrease the rate of negative laparotomy.

W7) Not everything is appendicitis : Daniela Rosillo Castro¹, Maria Victoria Pérez López¹, Mihaela Vijulie¹, Carlos Andres Andujar Tejada¹, Antonio Pérez Sanz¹, Antonio Mellado Ferrandez¹ : 1. Hospital Universitario Reina Sofia de Murcia, Murcia, Murcia, Spain.

BACKGROUND: Benign cystic teratomas are the most common ovarian neoplasm in women less 45 years old. One of the major complications seen in cystic teratoma is torsion; this occurs

in 11-15% of patients. The acute surgical abdomen is of gynaecologic cause in 2-5%. CASE: A 31 years old woman presented to the emergency room with a sudden and severe pain in the right iliac fossa of four hours duration. The pain was constant without radiation. It was associated with vomiting. The patient did not have any relevant gynaecologic and urologic symptoms. Past medical history was caesarean one month ago without complications. On examination, the blood pressure was 98/50 and pyrexia. Physical exam revealed positive abdominal guarding and abdomen tenderness in the right iliac fossa and no palpable mass. Bowel sounds were hypoactive. Results of laboratory studies showed no presence of human chorionic gonadotropin. Leukocytes or Anaemia were not present. An emergency ECO abdominal was performed and the image presented a hypoechoic ovary, with tenderness in it and very painful when pressed. CT scan of the abdomen confirmed a cystic image with calcified areas in the interior and minimal peripheral calcified layers. The patient was diagnosed with acute abdominal pain due to probable torsion of an ovarian teratoma. DISCUSSION: The symptoms reported by the patient, the physical check as a wave of tests performed during admission were not conclusive to establish an accurate diagnosis for this reason a differential diagnosis should be recommended as renal colic, ectopic pregnancy and torsion of and ovarian cyst.

W8) A SIMPLE WAY TO REDUCE PAIN AFTER LAPAROSCOPIC CHOLECYSTECTOMY: SUBDIAPHRAGMATIC ASPIRATION : Abdullah Ozgonul¹, Zeynep Baysal², Ozgür Sogüt³, Hasan Cece⁴, Ali Uzunköy¹, Mehmet Unaldi⁵ : 1. University of Harran, Department of General Surgery, Sanliurfa, Turkey. 2. University of Harran, Department of Anesthesiology and Reanimation, Sanliurfa, Turkey. 3. University of Harran, Department of Emergency Medicine, Sanliurfa, Turkey. 4. University of Harran, Department of Radiology, Sanliurfa, Turkey. 5. Kartal Research and Training Hospital, Department of Emergency Medicine, Istanbul, Turkey.

INTRODUCTION: Objective: To determine the relation between residual gas and postoperative pain and assess the effects of residual gas drainage on patient discomfort. METHODS: Sixty consecutive patients undergoing laparoscopic cholecystectomy were randomized into laparoscopic cholecystectomy (group A), laparoscopic cholecystectomy and drain placed via the gallbladder fossa at the conclusion of surgical procedure (group B), laparoscopic cholecystectomy and subdiaphragmatic gas aspiration at the conclusion of surgical procedure (group C) groups. Chest x-rays of all patients at the sixth hour after procedure were evaluated to calculate the volume of residual gas under the right diaphragm. RESULTS: Age, sex, and durations of operation of the groups are shown in table 1. According to these findings, there were no significant differences between the groups (P>0.05). Three groups were compared according to VAS Score for abdominal and shoulder pain. In the first hour, group C had a statistical difference (P<0.05). On the 4th and 12th hours, there was no difference between the groups. Group C had statistically less subdiaphragmatic gas volume on chest x-ray when compared with the other groups. CONCLUSION: Aspiration of residual gas at the conclusion of laparoscopic surgery reduces postoperative back and shoulder pain and improves patient comfort.

Table 1: Demographic data and duration of surgery according to all groups.

	Group 1 (n=20)	Group 2 (n=20)	Group 3(n=20)
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Age(year)	41±12	43±9	44±8
Gender(Male/Female)	16/4	15/5	14/6
Body mass(Kg)	69±7	62±8	65±8
Operation duration(Minute)	41±9	46±5	45±5

W9) Epiploic Appendagitis Mimicking Splenic Pathology : Caitriona Mullarkey¹, Gabrielle O'Connor¹ : 1. Mid Western Regional Hospital, Limerick, -, Ireland.

CASE: We report a case of a fifty seven year old man presenting with an abrupt onset of left upper quadrant pain radiating to the shoulder tip. An abdominal CT revealed stranding of the epiploica adjacent to the splenic flexure compatible with epiploic appendagitis. He was managed conservatively and had an uneventful follow-up. **DISCUSSION:** We describe a review of the literature highlighting how infrequently this condition causes upper abdominal pain; usually presenting with iliac fossa symptoms. We highlight the clinical and radiological interventions required to make this diagnosis correctly and discuss the merits of operative intervention versus conservative management.

W10) The values of initial C-reactive protein (CRP) and kidney computed tomography in patients with acute pyelonephritis : Kim Mikyung¹ : 1. emergency medicine, Catholic medical center, Seoul, Korea, South.

INTRODUCTION: This study was conducted to see the values of initial C-reactive proteins (CRP) and kidney computed tomography (CT) in emergency department (ED) for predicting the severity of acute pyelonephritis. **METHODS:** The 139 patients who were diagnosed with acute pyelonephritis from January 2007 to June 2008 were enrolled in this study. The patients underwent kidney CT in the ED and their CT findings were classified as normal, focal wedge shaped lesion, multi-focal wedge shaped lesion, mass-effect lesion, abscess formation. We compared symptoms, vital sign, past history, initial laboratory findings, initial serum CRP in ED and hospital day according to the kidney CT grade in ED. **RESULTS:** Among the 139 patients, 138 were woman, and the mean age of the patients was 48.5±17.7 years. We classified the CT grade into five grades: grade 1: normal (n=20), grade 2: focal wedge shaped lesion (n=25), grade 3: multi-focal wedge shaped lesion (n=45), grade 4: mass-effect lesion (n=42), grade 5: abscess formation (n=7). The statistically significant differences in leukocyte counts (p=0.031), neutrophil ratio (p=0.013), ESR (p=0.011), CRP (p=0.000) and admission duration (p=0.000) were found between the CT grade. Patients were classified into two groups according to the CT grade: a mild group (grade 1,2), and a severe group (grade 3-5). The leukocyte counts, neutrophil ratio, ESR, CRP, hospital day and maximal body temperature were higher in severe group. According to the ROC curve for prediction of severity, the area under the curves were 0.775(95% CI, 0.695-0.854) for the CRP. **CONCLUSION:** Initial CRP level in ED showed good correlation to the kidney CT grade in patients with acute pyelonephritis. In conclusion, our study suggests that initial CRP level with the kidney CT

grade may be used as prognostic indicator of acute pyelonephritis in ED.

W11) Variceal Hemorrhage: Impact after commencement of a new action guide in Emergency Department : Francisco J. Salvador Suárez¹, Javier Millán Soria¹, Angel Torregrosa Sanchis¹, Carles Pérez García¹, Nieves Atienzar Herraes¹, Marina Valiente Bayarri¹, Ana Beltrán Sánchez¹, Raquel Ibañez Pacheco¹ : 1. Emergency Department, Lluís Alcanyis Hospital from Xàtiva, Xàtiva, Valencia, Spain.

INTRODUCTION: Upper gastrointestinal (UGI) bleeding is a common process in the Emergency Department (ED) with mortality between 5-20%. It is caused in almost 25% of cases by esophageal varices bleeding. Objectives: To assess the impact of commencement of a protocol in June 2007 previously developed together with Digestive Department for the management of variceal hemorrhage in the ED. It included the quality of medical histories and the management of admitted patients. **METHODS:** We conducted an observational descriptive retrospective study from Jan 2006 to Dec 2008. Included: ? 18 y.o. patients with variceal hemorrhage by endoscopy. Excluded: serious renal failure, respiratory insufficiency, pregnancy and patients attended during 2007 year, considering the later training and implementation period of the guide. Variables: age, sex, quality achievement of the established protocol by means of medical history, complementary tests, average stay in ED, and treatment modifications after the admission. **RESULTS:** 25 patients included (59% males and 41% women). Average age 61.2 years (39-79). Both groups of patients (9 before and 16 after the guide was established) are similar ($p < 0,05$) in age, sex, type of hepatopathy. After commencement of the guidelines: degree of achievement of the anamnesis (93,75% vs to 44,44%. $P 0,001$); Thórax X-Ray carried out (81,25% vs to 66,7%. $P 0,023$) and upper endoscopy before the admission to the hospital (100% vs to 55,5%. $P 0,001$). Treatment modifications were not produced in 93,75% vs to 44,44% in 2006, increasing the average stay in the ED from 9h 43 m to 13h 17 m in 2008. **CONCLUSIONS:** An improvement was achieved in the quality of the medical histories, avoiding modification in treatments after the admission to the hospital that cause an increase in work and often result in mistakes and confusions by nursing staff. The increase of the average stay in the ED is due to the fact that since the new protocol is established neither patient with hemodynamic instability nor without an upper endoscopy were admitted to the hospital provided that it will determine the prognosis and the later treatment.

W12) Terlipressin or somatostatin: What should we use in variceal hemorrhage? : Francisco J. Salvador Suárez¹, Javier Millán Soria¹, Carles Pérez García¹, Ana Beltrán Sánchez¹, Marina Valiente Bayarri¹, Angel Torregrosa Sanchis¹, Nieves Atienzar Herraes¹, Miriam Sanchis Cuenca¹ : 1. Lluís Alcanyis Hospital from Xàtiva, Xàtiva, Valencia, Spain.

INTRODUCTION: The upper gastrointestinal (UGI) bleeding is a common process seen in the Emergency Department (ED) with mortality between 5-20%. It is caused in almost 25% of cases by esophageal varices bleeding. Objectives: Compare re-bleeding incidence, survival and possible complications of the treatment initiated in ED with somatostatin opposite to terlipressin in patients with variceal hemorrhage. Define the features of the patients attended. **METHODS:** We conducted an observational descriptive retrospective study from January 2006

to December 2008. Included: 18-year-old patients with variceal hemorrhage by endoscopy. Somatostatin group: patients attended in 2006. Terlipressin group: all attended in 2008. Excluded: serious renal failure, respiratory insufficiency, pregnancy and patients attended during 2007 year, when no common guideline of action existed. Variables: sex, age, clinical and laboratory (blood pressure (BP), cardiac frequency (CF), haemoglobin (Hb), Quick value), endoscopic findings, treatment complications, average stay in ED and hospitalization stay, re-admission time because of UGI bleeding, survival. RESULTS: 25 patients included (59% males and 41% women). Average age 61.2 years (39-79). Type of hepatopathy: 55.8% alcohol; 29.15% HCV +; 15.05% others. Somatostatin group: 10 patients included. Terlipressin group: 16 included. Both groups are comparable ($p < 0,05$) concerning age, sex, type of hepatopathy, BP levels, CF and Hb to the admission. Average hospitalization stay was 7,22 days and 7,37 respectively ($p 0,062$). Re-admission for UGI bleeding before 6 months limit: 40% and 37,5% ($p 0,054$). Survival to 6 months in terlipressin group was 87,5% as opposed to 55,5% in somatostatin group ($p 0,001$). CONCLUSIONS: There are no significant differences between the treatments concerning the average length of stay of hospitalization and re-admission rate for UGI. Despite the small sample, there is a better 6 months survival in the terlipressin group. This, combined with the ease in its treatment guide would recommend its use as opposed to Somatostatin in patients with UGI bleeding caused by esophageal varices.

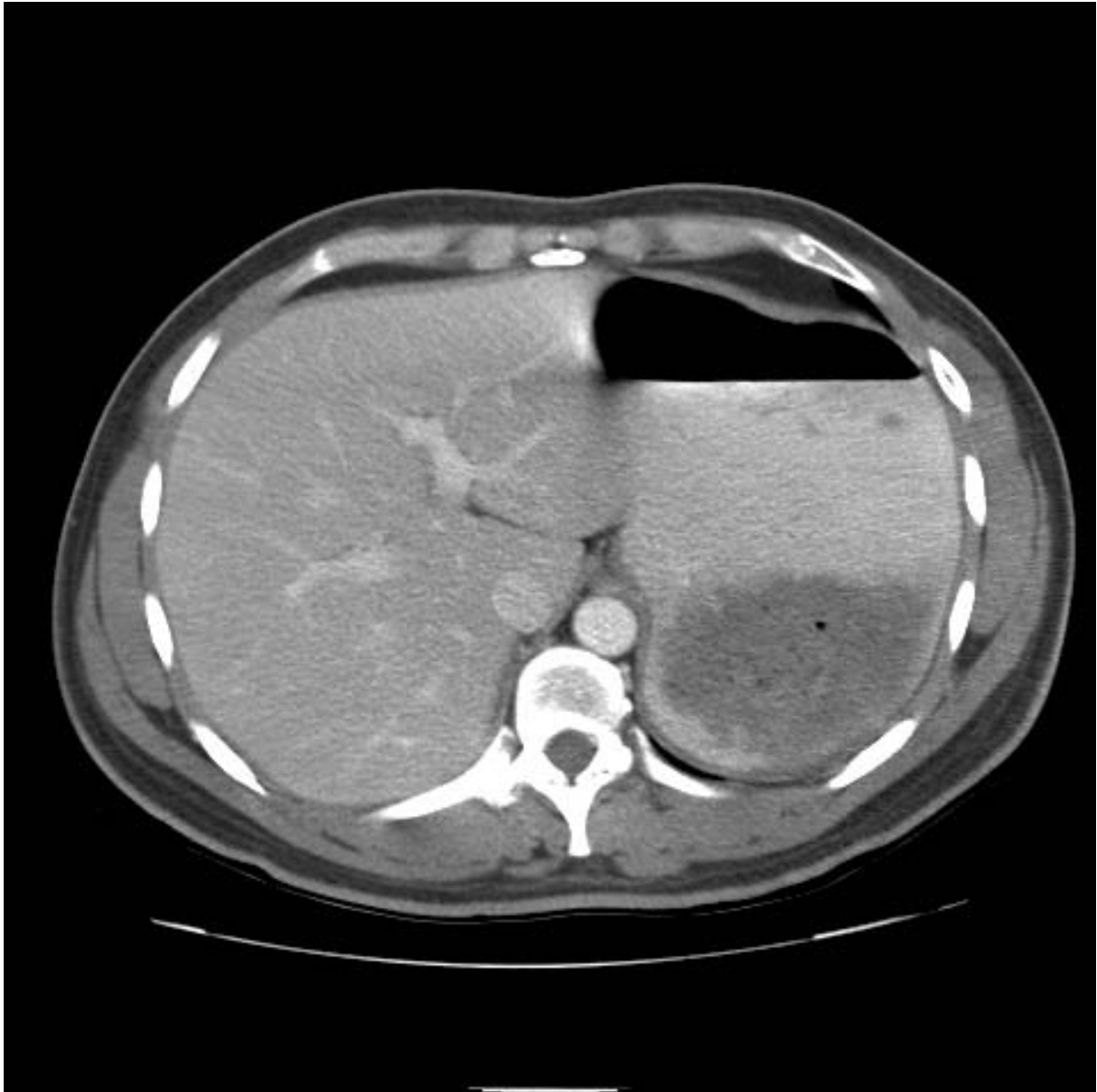
W13) Sexually Transmitted Diseases Do Not Discriminate; First Trimester Vaginal Bleeding Is Not Always A Threatened Abortion : Julie A. Gorchynski¹, Jeri Rose², Reagan Rivas³ : 1. Emergency Medicine, JPS Health Network, Fort Worth, TX, USA. 2. CHRISTUS Spohn Health System, Corpus Christi, TX, USA. 3. Texas A&M, University, Corpus Christi, Corpus Christi, TX, USA.

INTRODUCTION: Objective: To determine the prevalence of STD during the first trimester of pregnancy in women who presented to the ED with gynecological complaints. Secondary measure: To determine the prevalence of gonorrhea and Chlamydia in a subset of women with vaginal bleeding. METHODS: Prospective study of women in their first trimester of pregnancy who presented to the ED at a university tertiary referring hospital, urban level II trauma center. Study subjects included consecutive women who were 16 years of age or older, first trimester of pregnancy with gynecologic complaint(s). Cognitively impaired and incarcerated women were excluded. Cultures for gonorrhea and Chlamydia and wet mounts for bacterial vaginosis, caused by *Gardenerella* or *Trichomonas*, were obtained during the pelvic exam on all subjects. Tests for syphilis, HIV and Herpes were not routinely performed. Data collection included demographics, social and medical histories, chief complaint, laboratory values, culture and wet mount results, pelvic exam findings and ultrasound imaging. RESULTS: The study population consisted of 122 patients; six subjects had been excluded due to gestational age >12 weeks. The sample population mean age was 24 (17- 40 years); 81/122 (66.4%) were single, 88/122 (72.1%) were multiparous, with 81/122 (66.4%) Hispanics and 39/122 (32.0%) Caucasians. The prevalence of STD was 64/122 (52.4%). Gonorrhea, Chlamydia, and bacterial vaginosis were present in 10/122 (8.2%), 36/122 (29.5%), and 18/122 (14.8%) of subjects, respectively. The prevalence of positive cultures for gonorrhea or Chlamydia in subjects with vaginal bleeding on exam was 65.7% (95% 0.559-0.744) with sensitivity and specificity of 47.9% and 67.6% with positive and negative likelihood ratios of 1.48 and 0.771. CONCLUSION: Our study is the first to demonstrate the clinical significance of the prevalence of STD during the

first trimester of pregnancy. Regardless of gynecologic complaint, emergency physicians should routinely obtain vaginal and cervical cultures.

W14) A Pediatric Cause of Abdominal Pain in an Adult : Lisa Moreno-Walton¹, Mary T. Ryan² : 1. Emergency Medicine, Louisiana State University Health Sciences Center, New Orleans, LA, USA. 2. Lincoln Medical and Mental Health Center, Bronx, NY, USA.

CASE: Chief Complaint: "My belly hurts." HPI: 37 yo male complained of diffuse, severe abdominal cramping and pain over the past 24 hours. He denies fever, chills, nausea, vomiting, constipation or diarrhea. His last normal bowel movement was the day of presentation. Vital signs: T 98.4F, Bp 131/79, HR 69, RR 16. Exam: HEENT-membranes moist. Lungs clear. Heart regular rate and rhythm without murmurs. Abdomen was mildly distended with normal active bowel sounds, diffusely tender without rebound or guarding. Rectal exam- normal tone with no masses, no stool in the vault, maroon residue which was guaiac positive. Lab: WBC 15.7, UA negative for white cells or bacteria, Chemistry, LFTs, amylase, lipase within normal limits. Imaging: Abdominal xray and CT scan were done. Diagnosis: Intussusception. On the CT, the stomach is distended with air, fluid and food residue. At the level of the distal ileum in the right lower quadrant, there is thickening of the bowel wall with intussusception. Dilation of the small intestine is noted proximally. There is a loop of small bowel in the RLQ with abnormal appearing intraluminal content consistent with obstruction. DISCUSSION: Intussusception is the most common type of intestinal obstruction in the child aged 3 months to 5 years. Males predominate 4:1. While rare in adults, it can occur with a lead point. In this case, our patient was later diagnosed with Crohn's disease. Air contrast enema can be attempted to reduce intussusception. If this is unsuccessful, operative management is indicated. Take Home Points: 1. Abdominal pain, usually intermittent, is the most common first symptom. 2. The triad of pain, emesis and currant jelly stool is seen in only a quarter of the patients diagnosed with intussusception. 3. Think outside the box! An adult may have a disease that is typically seen in children.





W15) The Case of a Pelvic Kidney : Lisa Moreno-Walton¹, Mary T. Ryan² : 1. Emergency Medicine, Louisiana State University Health Sciences Center, New Orleans, LA, USA. 2. Lincoln Medical and Mental

Health Center, Bronx, NY, USA.

CASE: Chief complaint: Nausea, vomiting, back pain and abdominal pain. HPI: 53 yo male complained of one day of back pain, midline lower abdominal pain, nausea and vomiting times three. Vital signs: T 98.2F, BP 135/85, RR 16, HR 55. Exam: Lungs clear, Heart regular rate and rhythm without murmurs. Abdomen was non-distended with normal active bowel sounds; diffusely tender with guarding, but no rebound. Rectal exam was guiac negative, normal tone. Lab: WBC 5.7, Chemistry normal, UA- 30-50 WBCs, many bacteria, 1+ protein. Imaging: CT of the abdomen was done. Diagnosis: Right pelvic kidney with hydronephrosis and UTI.

DISCUSSION: During the fifth and sixth weeks of fetal life, the mature kidneys lie in the pelvis. As the pelvis and abdomen grow, the kidneys ascend slowly until the seventh week when the hila point medially and the kidneys are located in the abdomen. By the ninth week, they lie in a retroperitoneal position at the level of L1 with the hila facing anteromedially. When kidneys fail to ascend to their normal position, they are called ectopic kidneys. They most usually remain in the pelvis, as pelvic kidneys. Sometimes they fuse, creating a pancake kidney. This patient should be started on antibiotics. He requires a GU consult, because UTIs in males are rare, and this male has an abnormal kidney as well. Take Home Points: 1. Abnormal kidneys are more prone to infection and to abnormal renal function. 2. Analysis of UA and chemistry are essential for these patients, as is GU consult so as to optimize the preservation of normal renal function. 3. Seek other congenital anomalies in patients with ectopic or fused kidneys.



W16) Rectal foreign bodies: a report of five cases. : Zikret Koseoglu¹ : 1. EM Service, adadan numune education and reserach hospita, Adana, Adana, Turkey.

Foreign materials were detected in the rectum in five male patients with ages ranging from 20 to 66 years. The materials were soda bottles in two cases, glasses in two cases, and shover nozzle in one case. They were extracted with the patients in lithotomy position after anal dilatation, under general anesthesia in four cases. The other patient presented with acute

abdominal signs and had a diagnosis of rectal perforation. He underwent transanal rectal suture repair with proximal fecal diversion. No procedure-related complications occurred and the patients whom the foreign materials were extracted were discharged 24 hours after the operation. The other patient with diversion colostomy was operated on 3 months later for colostomy closure.

W17) Anesthesia in a Patient with Pacemaker and Implantable Cardioverter Defibrillator.
: Zoe Chitou¹ : 1. Hospital of Florina, Florina, Greece.

AUTHORS Chitou Zoe, Mavridou Maria, Kligatsis Pantelis, Kaloudioti Maria, Stefaniotou Antonia, Triantafillidou Eleousa

BACKGROUND AND GOAL OF STUDY We describe a case of a patient with pacemaker and implantable cardioverter defibrillator undergoing operation for bleeding of gastric ulcer under general anesthesia.

Direct interrogation with a programmer remains the only reliable method for evaluating battery status, lead performance and adequacy of current settings. Communication with cardiologist before and during the operation must be continuous.

ECG monitoring and the ability to deliver external cardio version or defibrillation must be present during the time of operation. It was used bipolar cautery and the patient had VVI demand pacemaker.

Finally the maintenance of hemodynamic stability is the most important anesthetic parameter here.

MATERIAL AND METHODS Patient 73 years old was transferred as an emergency case in theater. His condition was unstable, (no measurable arterial pressure and low hematocrit of 14). Two big intravenous lines were established and colloids and blood were performed immediately. Ten minutes after the introduction in anesthesia, his blood pressure was measurable and his pulse was full.

A dose of 2 mg Cis-atracurium was given before Lycitrope. The introduction in anesthesia was performed by Propofol 200 mg, Lycitrope 100 mg and Fentanyl of 100 ?.

Inhalational agents may exacerbate long Q-T syndrome, so we avoided them. The maintenance of anaesthesia was performed by continuous Propofol and Cis-atracurium. During the operation his blood pressure was between 145/65 and 160/70 and HR 70. He received totally 4 units of blood and 3 lt colloids. He was warmed by blanket and hot fluids, since he entered in the theater, because the shivering is unwilling in these cases.

RESULTS the case was uneventful.

CONCLUSIONS. The aging of the population and our ability to care for a patient with increasingly complex disease suggest that we will be caring for many more patients with these devices.

W18) Traumatic Pancreatic Pseudocyst : Jose F. Peris Giner¹, Jaime Fernandez Campillo¹, Juan Carlos Medina Alvarez¹, Ivan Malisevskyy¹, Gustavo Alberto Fossato¹ : 1. URGENCIAS, HOSPITAL DE TORREVIEJA, Orihuela Costa, Alicante, Spain.

CASE: We describe the case of a British 29 year old woman, who presented to emergencies because she had lost 15 Kgr, and had very bad abdominal pain. She relates her symptoms to the fact that she had given birth 6 months ago. At examination a left hemiabdominal mass could be felt.

Blood Test Results: Hb 9,8 g/dl, hemogram: normal, coagulation: normal, PCR 5,2 (<1), Alfa1-fetoproteina, Beta-HCG, CEA, CA15-3, CA 19-9: normal. After a CT Scan with contrast and a abdominal ultrasound scan at emergencies, we found a pseudocyst (size 14x 11 cm) placed amongst, stomach, spleen & left kidney. Neither the body nor pancreas tail could be seen. The splenic vein was superiorly displaced and the caliber was reduced, with plenty of collateral circulation on left flank. We proceeded to admit her to the General Surgery ward where she had a distal pancreatectomy performed, owing a very high risk of braking the pancreatic pseudocyst. DISCUSSION: After a PUB MED search, we've gathered Traumatic Pancreatic Pseudocyst cases, whose starting mechanism were: pistol shot, hit with a blunt object wounded by knife, safety belt on in a car accident. We couldn't find that the trigger process in a eutocic birth was the external compression in any after having all the literature revised published case.





W19) Initial clinical findings of patients diagnosed post operatively with appendicitis at the South of Puerto Rico Hospital's Emergency Department. : Carlos F. Garcia-Gubern¹ : 1. Emergency Medicine, Hospital San Lucas/ Ponce School of Medicine, San Juan, PR, USA.

INTRODUCTION: It was our main objective to compare the presenting signs and symptoms of patients with acute appendicitis in our southern Hispanic population with those found in major textbooks and previous studied population from northeastern Puerto Rico. **METHODS:** The methods consisted of retrieving the main signs and symptoms, as well as laboratory and radiographic data, from medical records of patients with a pathologic exam positive for appendicitis. This data was then compared with those found on major textbooks. **RESULTS:**

Our findings demonstrate a significantly lower anorexia complaint as well as emesis in our studied population as compared with major textbooks and reviewed literature. **CONCLUSION:** The absence of this, once considered hallmarks of appendicitis, must not lead the physician to rule out this surgical diagnosis.

W20) Symptoms of Repetitive Ingestion of Acidic Caustic Stuff: Adult Case Presentation : Mehmet Dokur¹, Mine Kivrak¹, Cuma Yildirim² : 1. Kilis State Hospital, Kilis, Turkey. 2. Gaziantep University Medical Faculty, Gaziantep, Turkey.

BACKGROUND: Clinical symptoms after intake of acidic caustic substances may be considered in such a spectrum; as a result of coagulation necrosis after contact with mucosa, perforation in early period, stricture and carcinoma in late period. Acidic agents rarely pass through the duodenum due to pylorospasm. Since the injury level is not correlated with the symptoms, an endoscopic evaluation should be made. Most cases develop stricture if grade 2B or grade 3 injury is diagnosed after endoscopic evaluation. A conservative clinical approach should be preferred for cases without perforation. **CASE:** In this analysis, we looked into acute and early periods of a female patient who imbibed acidic agent on purpose of suicide. Our case had a similar suicide attempt one year before and underwent gastroduodenectomy & oesophagojejunostomy operation. Since the patient did not have stomach and duodenum, acidic agent affected the mucosa of oesophagus and forepart of the jejunum in grade 2B level. Certain symptoms at the beginning were slight hypotension-tachycardia, leucocytosis and high levels of enzymes' CRP, LDH, AST and ALT. Contrary to other parameters, CRP level kept high throughout the observation. The patient was started on parenteral nutrition, was observed and hospitalised for three weeks; with mucosal protection and a supportive and conservative approach no perforation developed. Steroid application was not preferred. Psychiatric consultation and support was given. **DISCUSSION:** This case demonstrates that mucosal injuries due to caustic stuff ingestion require a serious follow up and injuries in jejunal ans may lead to long term symptoms.

W21) A Comparison of Morbidity and Mortality of Immediately and Electively Operated Incarcerated Inguinal Hernias in Emergency Department of a University Hospital : Adnan Sahin¹, Enver Ihtiyar¹, Nurdan Acar², Burak Oztop¹ : 1. General Surgery, Eskisehir Osmangazi University Medical Center, Eskisehir, Turkey. 2. Eskisehir Osmangazi University Medical Center Emergency Department, Eskisehir, Turkey.

INTRODUCTION: Repairing of inguinal hernia is one of the most frequent operations in routine surgical practice. In general, risk of morbidity is low. Inguinal hernias are more common in men. **METHODS:** From 1st Jan-31th Dec 2008, patients with incarcerated inguinal hernias were included in the study from the emergency department (ED) of a university hospital. Reduction of hernias was tried first under analgesia in the ED. If reduction was successful, patients were operated on electively. When reduction failed, the patients were operated on immediately. Immediately and electively operated patients were compared retrospectively. **RESULTS:** Mean age of 23 patients with incarcerated inguinal hernias was 67 years old (range:28-84). All patients had abdominal pain, nausea, vomiting and a non-

reducible hernia pouch. Surgeons with similar experience tried analgesia and reduction first in the ED. It was successful in 10(43.4%) patients and these patients had elective operative repair. There was no intestinal pathology in the elective group. 13(56.6) patients were operated on immediately because reduction trials were unsuccessful in the ED. 3 resection and anastomoses were performed because of small intestine necrosis in the immediately operated group. In preoperative period, cardiorespiratory problems were similar among the two groups. In the immediately operated group, 2 patients died from cardiorespiratory problems in the postoperative period. Other patients in the immediately operated group were followed up 3-17 days (mean:8.15) in hospital. No patient died in the electively operated group. The patients were followed up 2-9 days (mean:3.88) in the postoperative period ($p<0.005$).

CONCLUSIONS: Risk of recurrence of inguinal hernia is high. It is clear that mortality and morbidity is higher in immediately operated patients. After first recognition of inguinal hernia, operation must be done in the early period to minimize mortality and morbidity. Our study supports this idea.

W22) A Comparison of Mortality of Patients Younger and Older than 70 Years Old with Acute Mesenteric Arterial Embolus in the Emergency Department of a University Hospital : Burak Oztop¹, Enver Ihtiyar¹, Nurdan Acar², Adnan Sahin¹ : 1. General Surgery, Eskisehir Osmangazi Universitesi Medical Center, Eskisehir, Turkey. 2. Eskisehir Osmangazi Universitesi Medical Center Emergency Dep, Eskisehir, Turkey.

INTRODUCTION: Acute mesenteric arterial embolus (AMAE) occurs because of known vascular diseases, atrial fibrillation. Endocarditis and atherosclerosis are rare causes. AMAE causes intestinal infarction. It generally is considered a disease of people older than 50-60 years. Mortality is high and in general, causes of mortality are sepsis and multiple organ failure. **METHODS:** This study was retrospectively performed in the emergency department (ED) of a university hospital in 2007-2008. Patients with AMAE were included the study. Patients were operated by similar experienced surgeons. Patients older than 70 years and younger than 70 years were compared for postoperative mortality. **RESULTS:** Mean age of patients was 66.8 (range: 30-87). All patients had an abdominal pain at the arrival to the ED. 21 patients were older than 70 years and 17 patients were younger than 70 years. In group of patients older than 70 years old, cardiac and respiratory comorbidities were higher than young group ($p<0.05$). In the group of 21 patients older than 70 years old, 6 patients (28.5%) were discharged from hospital and 15 patients (71.5%) died in the postoperative period. In the group of 17 patients younger than 70 years old, 10 patients (58.8%) were discharged from hospital and 7 patients (42.2%) died in the postoperative period. **CONCLUSION:** In spite of improvement of patient care, mortality of AMAE is still high recently, because the disease cannot be detected easily. One of the important methods for decreasing the mortality is to remember the disease especially in the patients who have risk factors. In addition, in geriatric patients a physician should remember that there may be more complications and mortality is higher than younger patients during the postoperative period in the intensive care unite. Our study supports this opinion.

W23) Management of per vaginal bleed in early pregnancy : Muhammad S. Afzal¹ : 1. emergency department, Queen Elizabeth Hospital Gateshead, Gateshead, TYNE AND WEAR, United Kingdom.

INTRODUCTION: Aims: 1. To identify a group of at least women attending the emergency department presenting with PV bleeding during suspected or confirmed pregnancy. 2. To establish management patterns in use at both North Tees and Hartlepool. 3. To formulate a guideline for the management of these patients, after consultation with specialists in obstetrics and gynaecology. **METHODS:** A retrospective audit was carried out, identifying patients who attended the emergency departments of North Tees and Hartlepool hospitals from September 2008 to mid-November 2008. Notes were obtained for attendances during this period for all female cases age between 12 and 55 coded as PV bleeding/threatened miscarriage. Data was collected on: 1. How, if at all, pregnancy had been confirmed prior to attendance; 2. If a urine pregnancy test was taken in the emergency department; 3. Result of that pregnancy test; 4. Gestation of the suspected pregnancy; 5. Pain as a presenting symptom; 6. If PV bleeding was heavy or spotting; 7. Recording of vital signs; 8. If serum labs were obtained, and if so, which; 9. IV access obtained; 10. IV fluid commenced; 11. Referral to gynaecology doctor; 12. Referral for early pregnancy assessment; 13. Number of days between presentation and EPAC appointment. **RESULTS:** During the period in question, 62 patients were initially identified from the selection criteria chosen. 25 of these were identified at North Tees, one of which was later excluded because on examination of the notes, it was found that no PV bleeding was present on examination. The remaining 37 were identified from Hartlepool Hospital. This gave a total of 61 patients identified who presented with PV bleeding in suspected early pregnancy across both hospital sites.

W24) Emergency contraception in the emergency department setting: effect of an education intervention : Margarita Puiggali¹, Isabel Puente¹, Dolors Aranda¹, Jose Luis Alvarez¹, Maite Martinez¹, Francisco Del Baño¹, Dolors Mendez¹, Silvia Laso de la Vega¹, Isabel Campodarve¹, Carlos Clemente¹ : 1. IMAS, Barcelona, Spain.

INTRODUCTION: In October 2004, a campaign to provide emergency contraception to women that requested this treatment in the emergency department setting was started. In a first phase, the percentage of repeat requests was 46.5%, 38.5% of which within the first 6 months.

OBJECTIVE: To assess the effectiveness of an education intervention to reduce the use of emergency contraception. **METHODS:** The emergency contraception kit (two pills of levonorgestrel) is provided with a condom and an informative handout. The education strategy consisted of information provided by the health care personnel on side effects, lack of suitability as a contraceptive method and the need to visit the gynecologist for further information. Authorization was requested to make a telephone call after 6 months and to participate in a survey regarding the information provided. Data were analyzed with the SPSS (version 15.0). **RESULTS:** Prospective data of 374 women who requested emergency contraception between Oct 2006 and Sept 2007 were recorded. The percentage of repeat requests referred by women was 53.6%. A total of 328 women gave the telephone contact number but only 213 (57%) could be reached. There were no significant differences in the rate of repeated requests between respondents and non-respondents, although among respondents, repeat requests during the first 6 months was higher than thereafter (47.5% vs 28.9%, $P=0.016$). The repeat request rate in the first 6 months among respondents was 15.6%. Of all 213 participants, 19 (9%) did not remember to have received any verbal information, 26 (12.2%) had not read the informative handout, only 79 (37.1%) visited a gynecologist, and 20 (9.4%) manifested the need of emergency contraception on some occasion after the index request. **CONCLUSIONS:** Patients generally recognized the provision of some kind of health care education during emergency department consultation. Only one third visited a gynecologist, which suggests the low perception of considering emergency contraception as a drug treatment. Education intervention seems to be associated with a decrease in the request of emergency contraception.

W25) Sepsis and Appendicitis: Study in the Valencian Community (Spain), 1998-2007 : Juan Carlos Andreu-Ballester¹, Amadeo Almela-Quilis², Armando Loscos-Lopez³, Enrique Marin-Tena⁴, Francisco Belmonte⁵, Maria Jose Basagoiti-Bilbao⁶ : 1. Emergency, Arnau de Vilanova Hospital, Valencia, Spain. 2. Arnau de Vilanova Hospital, Valencia, Spain. 3. Arnau de Vilanova Hospital, Valencia, Spain. 4. Arnau de Vilanova Hospital, Valencia, Spain. 5. Arnau de Vilanova Hospital, Valencia, Spain. 6. Arnau de Vilanova Hospital, Valencia, Spain.

INTRODUCTION: Appendicitis is the most common abdominal surgical emergency. Sepsis is a serious public health problem. Our aim is to investigate the incidence of sepsis in the appendicular pathology. **METHODS:** We downloaded data on discharge diagnoses of appendectomy, appendicitis and sepsis, according to the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), at all 26 public hospitals in the Valencian Community between 1998 and 2007, inclusive. **RESULTS:** Of the 4,576,226 hospital admissions during the period (1998-2007) at the 26 public hospitals of the Valencian Community, 44,683 cases had appendectomy surgery performed, and 42,742 cases were diagnosed of appendicitis, accounting for 9.7 and 9.3 cases per 1,000 hospital admissions, respectively. The number of sepsis at septic patients was 67 (0.15%). The negative appendectomy rate was 4.3% (N=1,941) with males 2.4%, and 7% in females (OR, 3.0 [CI95%, 2.8-3.4]; $P < 0.0001$). The number of sepsis in negative appendectomies was 18/1,941 (0.9%) vs 49/42,742 (0.1%) in appendicitis (OR: 8.1 [CI95%, 4.7-13.9]; $P=0.0001$). When stratified by sex, sepsis occurs in men with negative appendectomies, 12/621 (1.9%) (OR 18.0 [CI95%, 9.2-35.4]; $P<0.0001$) while in women, 6/1,320 (0.5%) (OR 3.6 [CI95%, 1.5-8-9]

P=0.011). There were 5,399 perforations (12.1%). Of the 67 with sepsis, 26 (38.8%) was in cases with perforation at appendectomies (OR, 4.6 [CI95%, 2.8-7.6]; P < 0.0001). The isolated germs were: E. Coli 15 (22.5%); Staphylococcus aureus 10 (14.9%); Streptococcus 7 (10.4%); Pseudomonas 2 (3.0%); Unspecified septicemia 34 (50.7%). There were 171 deaths (0.38%) in the study period. Of the 67 septic patients 14 (20.9%) died (OR 74.8 [CI95%, 40.7-137.6]; P< 0.0001). Table 1 shows variables associated with sepsis and appendectomized patients by multivariate analysis. CONCLUSIONS: In our community, the prevalence of sepsis among appendectomized patients was ? 1.5/1000 appendectomies. Sepsis is more frequent among Human Immunodeficiency Virus, negative appendectomies, perforation and elderly patients. The most frequent germs were E. Coli and Staphylococcus aureus.

Table 1. Variables Associated with sepsis and appendectomized patients

Variable	?	OR (95% CI)	P value
HIV	3,602	36,681 (6,188-162,223)	< 0.0001
Negative appendectomie	2,464	11,751 (6,188-22,316)	< 0.0001
Perforation	1,939	6,955 (3,934-22,316)	< 0.0001
Elderly patient	1,083	2,955 (1,710-5,106)	< 0.0001

HIV= Human Immunodeficiency Virus

W26) Quality in the Care of Urinary Tract Infections in an Emergency Department of a Primary-care Level Hospital: a 3-year experience : Isabel Puente¹, Carlos Clemente¹, Dolors Aranda¹, Jose Luis Alvarez¹, Jose Luis Echarte¹, Dolors Mendez¹, Silvia Minguez¹, Maria Jesus Lopez¹, Oriol Pallas¹, Margarita Puiggali¹ : 1. Emergency, IMAS, Barcelona, Barcelona, Spain.

INTRODUCTION: Urinary tract infection (UTI) is frequent in the emergency setting. Quality of care provided to patients with UTI in the emergency department between Jul'05-Jun'08 was assessed. METHODS: Patients treated at the ED with discharge of UTI were reviewed. Adequacy of diagnosis according to clinical and analytical data was reviewed. Data analyzed with SPSS 15.0. RESULTS: 743 UTI were enrolled. Diagnosis was considered definite in 331 cases(44.5%), probable in 107(14.4%), possible in 138(18.6%) and non-UTI diagnosis in 167(22.5%). Urine culture was done in 556(76.2%) cases; 334(59%) were positive, 179(31.6%) contaminated and 53(9.4%) negative. In the 167 cases of non-UTI diagnoses, male were younger (50±19vs59±20y,p=0.049). Differences between men and women included: dysuria (44% vs66%); abdominal pain (25% vs10%)(p<0.001); symptoms suggestive of UTI (62% vs87%,p<0.001), negative results in the reactive strip (37% vs 12%,p<0.001); unrevealing urinary sediment (87% vs12%,p<0.001); and non-principal diagnosis (25% vs8%,p<0.001). In 177 cases(24%) in which urinary culture was not carried out (possible or probable UTI in 78 cases[10.5%]), men without urine culture were significantly younger than those with culture (49±21 vs 58±20,p=0.025). There were significant differences in the proportion of non-principal diagnosis (26% vs9%,p=0.042), negative reactive strip 67% vs39%,p=0.012), and negative urinary sediment (64% vs6%,p<0.001). In 179 cases(24%) in which urinary culture

was contaminated (possible or probable UTI in 150 cases[20.2%]), the proportion of contamination increased in patients with abdominal pain as the reason of consultation (23% vs 10%, $p < 0.001$), data of physical examination not suggestive of UTI (30% vs 17%, $p = 0.001$), negative reactive strip 26% vs 7%, $p = 0.001$, and negative or low-grade urinary sediment ($p < 0.001$). CONCLUSIONS: There is a large number of erroneous UTI diagnosis that could be avoided. A high number of cases in which urine culture was not performed or with contaminated culture was observed, which is an additional difficulty when the initial treatment is not effective.

W27) A 3-year Study of Urinary Tract Infections in an Emergency Department of a Primary-care Level Hospital : Isabel Puente¹, Carlos Clemente¹, Dolores Aranda¹, Jose Luis Alvarez¹, August Supervia¹, Maria Teresa Martinez¹, Francisco Del Baño¹, Jose Luis Echarte¹, Alfons Aguirre¹, Margarita Puiggali¹ : 1. Emergency, IMAS, Barcelona, Barcelona, Spain.

INTRODUCTION: Urinary tract infection (UTI) is a frequent disorder in the emergency setting. We describe the characteristics of patients with UTI attended in the emergency department between July 2005 and June 2008. METHODS: The records of all patients treated at the emergency department in which the diagnosis on discharge was UTI were reviewed. Each case was re-assessed to confirm the adequacy of diagnosis. Data were analyzed with the SPSS version 15.0 for Windows. RESULTS: A total of 743 UTIs were registered; 83.2% ($n = 618$) were women, which were younger than men (mean age 41 ± 21 years vs 56 ± 21 years, $P < 0.001$). Reasons for consultation were dysuria (58%), abdominal pain (15%), lumbar pain (10%), malaise (6%), and fever (6%). On the initial assessment the following were recorded: dysuria in 64% of cases, abdominal pain in 31%, pain in response to pressure on the lower back in 20% lumbar pain in 18% and fever in 16%. The diagnosis was established by urinalysis in 687 cases (92%), reactive strip in 49 (7%) and symptoms only in 7 (1%). Blood tests were performed in 315 cases (42%); leukocytosis was found in 145 (20%). Urinary samples were cultured in 566 (76%) patients. Cultures were positive in 334 (59%) cases, contaminated in 179 (32%) and negative in 53 (9%). Isolated pathogens included *Escherichia coli* (73.7%), *Staphylococci* (12.3%) and *Klebsiella pneumoniae* (5.1%). Main antimicrobials administered were amoxicillin/clavulanate in 33.9% of patients, fosfomicin in 22.3%, ciprofloxacin in 15.9%, cefuroxime in 7.5% and cefixime in 7.4%. The diagnosis of UTI was definitively made by positive urine culture in 331 (44.5%) cases. A probable diagnosis based on clinical findings was made in 107 (14.4%) cases; in 167 cases (22.5%), UTI was not clearly documented. CONCLUSIONS: UTI was more common in women, who were younger than men. Dysuria was the main reason for consultation. Urine culture was performed in only three fourths of the cases. In up to one fourth of cases, the diagnosis of UTI could be incorrect.

W28) Incidence of upper gastrointestinal disease and comparison of the diagnostic value between barium meal and endoscopy : Hamidreza Hatamabadi¹, Mohamad Kalantari meibodi¹, Afshin Amini¹, Hojat Derakhshanfar¹ : 1. emergency, sbmu, Tehran, tehran, Iran.

INTRODUCTION: Upper gastrointestinal disease is a common disease in people. It is necessary to find the accurate and the correct method to earlier diagnosis of this problem. In

this search we want to compare to determine which method, barium meal or endoscopy, has more value in diagnosing upper gastrointestinal disease. **METHODS:** At first we considered 60 outpatients with GI problems referred to Imam Hossein Hospital during a 3 month period. Then these patients undertook a barium meal method after 6-8 hours fast and after 24 hours endoscopy and biopsy (if ulcer visualized) was performed on these patients. In this situation the endoscopist had no information about the barium meal result. The barium meal result was discussed by at least 3 radiologists and endoscopic method was performed by one endoscopist. (Before we performed the barium meal and endoscopy method the patient was fasted). **RESULTS:** The diagnosis of esophageal disease by barium meal method has a diagnosis value the same as endoscopy in diagnosis 80% of esophageal cancers and polyps but in esophagitis and candidiasis endoscopy had better value rather than barium. Barium meal of 60% was reported normal by 3 radiologists who had a gastric ulcer in endoscopic method and have cancer in biopsy. Barium meal of 65% and 50% and 100% was reported normal by 3 radiologists in a case of gastritis and polyp and gastric varices respectively noted on endoscopic method. Barium meal of 9% was reported normal by 3 radiologists have a duodenal erosion on endoscopic method. The barium meal method had a better diagnostic value rather than endoscopy in diagnosing duodenal diverticuli and in diagnosing duodenal disease. **CONCLUSION:** We recommend all patients with symptoms and signs of upper gastrointestinal problem despite a normal barium study should undergo endoscopy procedures.

W29) Comparison of the diagnostic value of barium meal and endoscopy method in the diagnosis of upper gastrointestinal disease : Hamid Kariman¹, Mohamad Kalantari meibodi¹, Afshin Amini¹, Hamidreza Hatamabadi¹, Ali ArhaMI DOLATABADI¹ : 1. EMERGENCY, SBMU, Teran, TEHRAN, Iran.

INTRODUCTION: Upper gastrointestinal disease is a common disease in people. It is necessary to find the accurate and the correct method to earlier diagnosis of this problem. In this search we want to compare to determine which method, barium meal or endoscopy, has more value in diagnosing upper gastrointestinal disease. **METHODS:** At first we considered 60 outpatients with GI problems referred to Emam Hossein Hospital during a 3 month period. Then these patients undertook a barium meal method after 6-8 hours fast and after 24 hours endoscopy and biopsy (if ulcer visualized) was performed on these patients. In this situation the endoscopist had no information about the barium meal result. The barium meal result was discussed by at least 3 radiologists and endoscopic method was performed by one endoscopist. (Before we performed the barium meal and endoscopy method the patient was fasted). **RESULTS:** The diagnosis of esophageal disease by barium meal method has a diagnosis value the same as endoscopy in diagnosis 80% of esophageal cancers and polyps but in esophagitis and candidiasis endoscopy had better value rather than barium. Barium meal of 60% was reported normal by 3 radiologists who had a gastric ulcer in endoscopic method and have cancer in biopsy. Barium meal of 65% and 50% and 100% was reported normal by 3 radiologists in a case of gastritis and polyp and gastric varices respectively noted on endoscopic method. Barium meal of 9% was reported normal by 3 radiologists have a duodenal erosion on endoscopic method. The barium meal method had a better diagnostic value rather than endoscopy in diagnosing duodenal diverticuli and in diagnosing duodenal disease. **CONCLUSION:** We recommend all patients with symptoms and signs of upper gastrointestinal

problem despite a normal barium study should undergo endoscopy procedures.

W30) Endoscopy Referrals from the ED from January 2009 : Andrea P. Murphy¹ : 1. Emergency Department, St. Vincent's University Hospital, Dublin, Ireland.

INTRODUCTION: Our aims were to review ED requested endoscopies for 1 month to assess appropriateness of the referral. **METHODS:** We identified cases from the Endoscopy log, reviewed ED charts and hospital notes, and examined the ED computer system for any unexpected returns. **RESULTS:** A total of 30 endoscopies were performed on ED patients. 22/30 patients returned to CDU for a scope within one week of ED attendance. 3 patients stayed overnight in CDU for endoscopy in the morning. 4 stayed in under team A or B, 1 CPEU. Another 5 scopes on boarded ED patients were not included in audit. Types of Endoscopies: 16 OGD, 6 OGD + colonoscopy, 5 colonoscopies, 1 sigmoidoscopy, 1 ERCP. Indications for OGD included epigastric pain, dyspepsia, and nausea/vomiting, haematemesis, anaemia. Indications for colonoscopy included change in bowel habit, fresh pr bleeding, anaemia. **RESULTS:** Of the 22 OGDs: 13 showed gastritis +/-duodenitis and all these patients were discharged on a PPI, 2 further patients had gastritis, were CLO positive and treated with triple therapy, 1 had Barrett's epithelium, 1 polyp removed, and 5 Normal gastroscopies. Of the 12 colonoscopies: 1 sigmoidoscopy showed mild inflammation with scattered ulcers and patient was discharged on pentasa, 3 colonoscopies showed indetermined colitis, mildly active segmental colitis Rx. Pentasa +/- predfoam enema, 1 colonoscopy showed internal haemorrhoids, 1 ischaemic bowel, 1 rectal CA, 1 diverticula and stricture, and 4 normal colonoscopies. Disposition: 9/30 patients were seen in gastro OPD 2-6 weeks after endoscopy for biopsy results. 2/30 patients were admitted to the wards following endoscopy. **CONCLUSION:** Are we doing too many scopes on patients through the emergency department? 73% of endoscopy preformed on ED patients had a positive finding. A 29 year-old woman brought back for a colonoscopy through CDU was diagnosed with rectal CA. Another patient held in CDU had a bowel infarction diagnosed on colonoscopy. The "Bottom Line" is that our rate of positive scopes is more than acceptable (73%). Moreover, we are diagnosing conditions with the aid of endoscopy that would have serious consequences if left undiagnosed.

W31) Cardiac Arrests over 4 years in the Emergency Department: Are We Saving Lives? : Gabrielle O'Connor¹, Caitriona Mullarkey¹, Cathal O'Donnell¹ : 1. Mid-Western Regional Hospital, Limerick, Limerick, Ireland.

INTRODUCTION: The foundation of ACLS care is good BLS care, beginning with prompt high-quality bystander CPR and, for VF/pulseless VT, attempted defibrillation within minutes of collapse. Typical ACLS therapies have not been shown to increase rate of survival to hospital discharge. Over the last 4 years, a number of changes and advances have occurred in the field of cardiac life support. These include the 2005 AHA guidelines for CPR and Emergency Care Circulation, the widespread use of automated chest compression devices and locally, the training of paramedics in pre-hospital ACLS. Our aim was to see if any of these advanced techniques were associated with increased rates of return of spontaneous circulation or survival, in our population. We subsequently review the international data on the various

therapies and consider the ongoing importance of good BLS care. **METHODS:** A cross-sectional study was carried out in an urban Emergency department with an average annual new patient attendance of 50,000. The data was collected retrospectively over a 4-year period from 2004 -2008. The main clinical outcomes of interest were return of spontaneous circulation and survival to hospital discharge. **RESULTS:** A total of 130 patients presented in cardiac arrest over the 4 year period, with 20% (26) achieving return of spontaneous circulation. 54% (14) of these received bystander CPR, while only 31% (8) received pre-hospital ACLS and 23% (6) were treated with an automated chest compression device. A total of 4% (5) patients survived to hospital discharge, 60% (3) of whom received bystander CPR. **CONCLUSION:** In conclusion from our 4 year study, the most important factor related to return of spontaneous circulation and survival to hospital post cardiac arrest, is bystander CPR. This is in keeping with the OPALS study, which clearly showed that patients can survive to discharge with only CPR post cardiac arrest, which emphasizes the importance of good BLS care.

W32) In-hospital Basic Life Support Training For All Nurses: Is It Possible? : Thierry Schissler¹, Bart Lesaffre¹ : 1. AZ St Jan Brugge Oostende, Oostende, Belgium.

INTRODUCTION: The first 2 links in the “Chain of survival”, and thus cardiopulmonary resuscitation training, are mandatory for a good patient outcome. We developed a basic life support training program for nurses, we composed a six-stage plan based on the ERC algorithm for in-hospital resuscitation, and we defined two quality standards. **METHODS:** The whole nursing staff in our hospital in Oostende had to register for a obligatory basic life support session, with the consent of the board of directors.

Divided in groups of six persons, first they were instructed and trained by an emergency physician (ERC ALS-provider) and an emergency nurse. During this course of 45 minutes, based on the 4-stage approach, the ERC algorithm for in-hospital resuscitation was instructed as a six-stage plan on a manikin placed in a hospital bed. Emphasis was placed on early recognition of cardiac arrest (e.g. gasping), early call for help, and depth and rate (“Stayin’ Alive” by the Beegees) of compressions.

This training course was immediately followed by a test session. The performance was registered on an Ambuman manikin (with software), laying in a hospital bed.

Several variables were recorded, i.a. time to call help, compression rate and depth, and ventilation volume. **RESULTS:** 82.6% (n=308) of the nursing staff attended the training sessions. 221 (72%) achieved a compression rate between 80/min and 120/min; 95 (31%) achieved a depth between 40mm and 50mm; 97 (31%) achieved a ventilation volume between 400ml and 700ml. Optimal resuscitation (defined as a combination of those three determinants) was achieved by 25 (8%); suboptimal resuscitation (defined as a combination of a compression rate between 70/min and 130/min, a depth between 35mm and 55mm and a ventilation volume of more than 300ml) was achieved by 98 (32%). **CONCLUSION:** For the first time our whole nursing staff was instructed and tested on basic life support. The standards ‘optimal resuscitation’ and ‘suboptimal resuscitation’ will help us to measure quality improvement and to compare our results with the results of other hospitals. The next test session will take place in six months.

W33) *In Situ* Intermediate-fidelity Medical Simulation for Comparison of In-Hospital First Responder Sudden Cardiac Arrest Resuscitation with Semi-automated Defibrillators and with Automated External Defibrillators : Leo Kobayashi¹, Jennifer A. Dunbar-Viveiros², Bethany B. Sheahan², Megan H. Rezendes², Jeffrey Devine¹, Mary R. Cooper³, Peggy B. Martin³, Gregory D. Jay⁴ : 1. Rhode Island Hospital Medical Simulation Center (RIHMSC), Providence, RI, USA. 2. Department of Nursing, Rhode Island Hospital, Providence, RI, USA. 3. Lifespan, Providence, RI, USA. 4. Department of Emergency Medicine, Alpert Medical School at Brown University, Providence, RI, USA.

INTRODUCTION: Multi-faceted approaches addressing resuscitation microsystems are needed to promote optimal in-hospital sudden cardiac arrest (SCA) response. The Arrhythmia Simulation/Cardiac Event Nursing Training-Automated External Defibrillator phase (ASCENT-AED) study employed *in situ* intermediate-fidelity medical simulation for experimental comparison of traditional and AED SCA first-responder models to generate recommendations for institutional leadership. **METHODS:** ASCENT-AED was conducted at an academic 719-bed referral hospital with Institutional Review Board approval. Two simulation scenarios were developed and featured either respiratory arrest with perfusing bradycardia or ventricular fibrillation (VF) arrest. Matched medical/surgical floors were equipped with semi-automated defibrillator (control) or AED (experimental); subjects functioned as solitary first responders and did not receive resuscitation training. **RESULTS:** 25 control and 25 experimental nurses were enrolled. The matched groups' non-blinded performances exhibited the following differences during VF scenario: faster calls for help by experimental group [18±11 seconds (mean±SD) vs. 25±17 seconds for control subjects (p<0.05)] and more chest compressions by AED group (95.8% at 115±37 seconds vs. control group's 44.0% (p<0.001) at 77±32 seconds (NS)]. Control group defibrillated 88% of their patients at 155±59 seconds with 32.0% rhythm analysis, as opposed to 100% (NS) of AED group patients at 154±72 seconds (NS) with 100% AED analysis (p<0.001). Bradycardia management was complicated by one defibrillation delivery in control group (vs. none in AED group (NS)) and frequent inappropriate chest compressions by AED group (69.6% vs. 28.0% in control group; p=0.01). **CONCLUSIONS:** AED-based in-hospital resuscitation model implementation was experimentally assessed with *in situ* medical simulation. Objective findings were used to guide institutional AED deployment for SCA response improvement.

W34) Ventricular Tachycardia due to Flumazenil Administration : Hassan Soleimanpour¹, Behrad Ziapour¹ : 1. Emergency Department, Tabriz University of Medical Science of Iran, Tabriz, Iran.

INTRODUCTION: Flumazenil is an Imidazo-benzodiazepine derived medication, generally used as competitive benzodiazepine antagonist in benzodiazepine poisoning during previous years. **CASE:** The patient discussed, was a 60 year old man brought to the ED, in coma. Concerning deep comatose status, endotracheal intubation was carried out once the patient arrived at the emergency department. The patient's medical history included diabetes mellitus, hypertension, ischemic heart disease (2 vessel disease) and a positive psychiatric background. He was clearly receiving only Glibenclamide, Nitroglycerine and Atorvastatin including intermittent courses of Lorazepam. When presenting to the Emergency Department, initial vital signs were BP:100/50, HR:71, RR:26 and spo2:75%, though then increased to 92%. BS was measured as 136mg/dl. Concerning the decreased level of consciousness, Naloxone

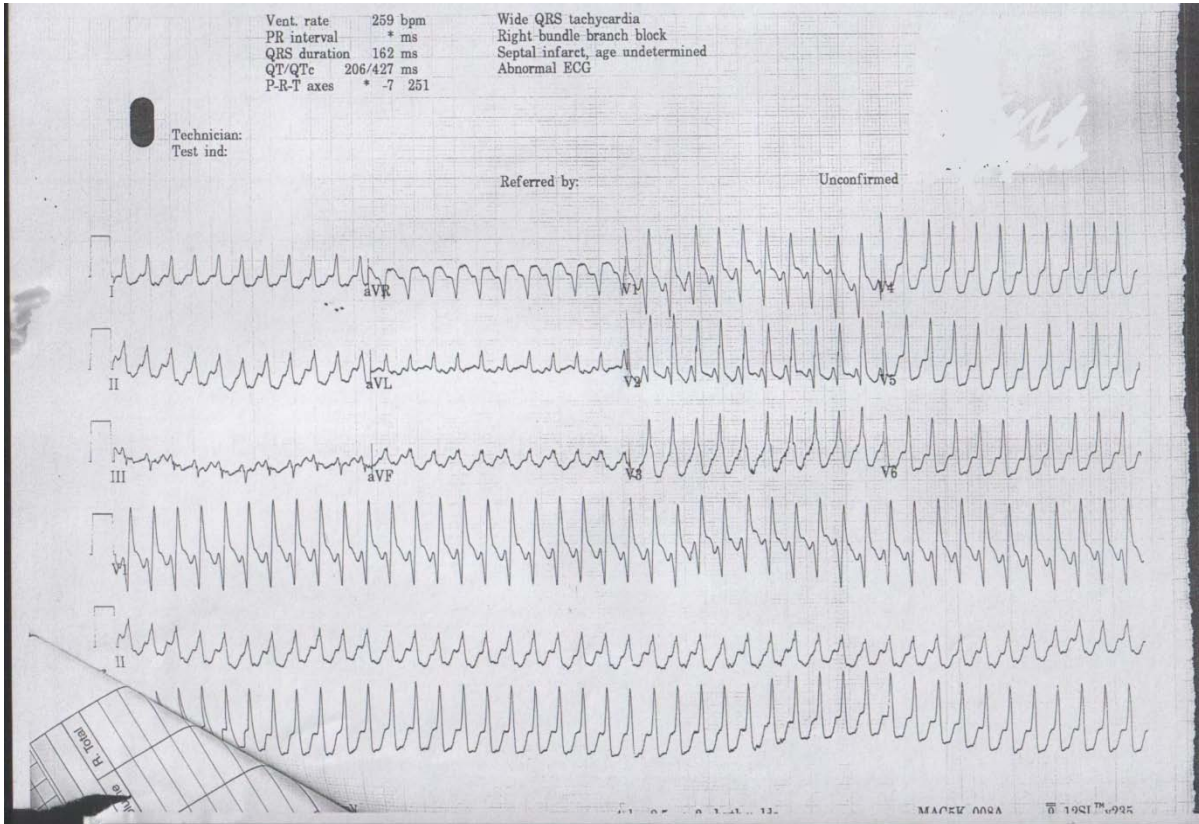
administration was tried first which didn't change the clinical status. Accordingly, family brought an empty sheet of 15 Lorazepam pills found on his bedside. Therefore, 0.2mg of Flumazenil was primarily administered to confirm the probable diagnosis of benzodiazepine intoxication. The administration process had completed a gap of about 20 min after the last 0.1 mg diluted bolus of Naloxone. Since proper response with increased LOC occurred, we titrated dosages of Flumazenil intermittently until complete awareness was achieved at a total dose of 3 mg. With the improved level of consciousness, the patient was extubated after a bolus of Lidocaine (100 mg IV). Seconds after extubation, the patient developed a pulsative ventricular tachycardia detected on the monitor screen. 100 mg of lidocaine was pushed intravenously which failed to control the arrhythmia. Therefore, a 150mg of Amiodarone was tried IV which terminated the arrhythmia. **DISCUSSION:** We believe that the ventricular tachycardia onset in the above mentioned case is secondary to Flumazenil administration in a susceptible patient with previous history of ischemic heart disease. Ventricular tachycardia has rarely been reported as a Flumazenil adverse effects.

W35) How did it change my life “vinchuca”? : Maria Victoria Pérez López¹, Daniela Rosillo Castro¹, Mihaela Vijulie¹, Carlos Andres Andujar Tejada¹, Antonio Pérez Sanz¹, Antonio Mellado Ferrandez¹ : 1. Hospital Universitario Reina Sofía de Murcia, Murcia, Murcia, Spain.

CASE: A 32 year old male of Bolivian nationality, living in Spain for 2.5 years presented to the emergency room relating episodes of dizziness during the past 12 months, with a presyncopal sensation for a few seconds. The episodes were more frequent in the last month. On physical examination: Patient conscious and oriented. BP 110/70 mmHg, HR 60 beat/min, T 36C. Cardiac sounds: rhythmic without other sounds. Pulmonary auscultation: Vesicular murmur preserved. Abdomen: normal. Investigations: ECG: sinus rhythm at a rate 60 bpm, PR 260 msg, anterior hemiblock. Chest XR: mild pulmonary cardiomegaly. Laboratory data: biochemical, coagulation, blood and cardiac enzymes analysis: Normal. Evolution: In the emergency room under observation we can see on the monitor screen sinusal brades of 4-6 seconds and we transfer the patient to the ICU (intensive care unit), and implanted a DDDR pacemaker with good results and evolution. Serology for Chagas: Positive. Echocardiogram: Normal. Diagnosis: Symptomatic sinus node disease. First-degree AV block. Anterior hemiblock. Everything in the context of a patient with Chagas disease. **DISCUSSION:** Chagas disease is a zoonosis that until recently was unknown in Spain. Following the wave of immigrants began to appear patients with cardiac and intestinal diseases, especially in people from South America. It is caused by the parasite *Trypanosoma cruzi* and transmitted by their main vector Chinche triatomines, known as vinchuca by his local name. According to WHO there are 90 million people in areas of infection. 16-18 million people infected. 700,000 patients with chronic Chagas heart disease. 45,000 victims die every year. In Spain: Cataluña, Madrid, Murcia and Valencia are the communities which have a greater number of reported cases. Conclusions: In all patients who present with cardiac or gastrointestinal symptoms, from endemic areas of human Chagas disease, requires the appropriate tests to rule out or confirm the disease. Mostly we need to consider the disease in persons who came from the rural areas.

W36) Sildenafil (Viagra) caused VT instead of excitation in a 73 old man : Muhammad A. Majeed¹, Ashes Mukherjee¹, Raj Paw¹ : 1. ED, nhs, Dudley, United Kingdom.

CASE: A 73-year-old man was transferred to ED with an episode of sustained monomorphic ventricular tachycardia (VT). He had taken 25 mg of sildenafil about 5 hrs ago for no medical reasons and 3 hrs later he started feeling unwell and then developed palpitations and epigastric pain. This gentleman had a history of hypertension, alcoholism, and smoked 20-25 cigarettes a day. He was taking ace inhibitors and multivitamins. He had no other significant family history. At admission VT with a frequency of 259 min⁻¹ was documented. Blood pressure was 70/60 mmHg and he was fully compus mentus. The VT was treated with synchronised shock of 200J and converted to sinus rhythm. The blood pressure came up to 110/55 and 12 lead ECG was normal. The patient was transferred to Coronary care unit and stayed in sinus rhythm. All blood results came back normal including cardiac enzymes. DISCUSSION: Sildenafil citrate is used worldwide to treat male erectile dysfunction and its use in pulmonary hypertension is emerging. The concerns include effects on blood pressure, heart rate and cardiac electrophysiology. A report from the U.S. Food and Drug Administration was published, describing deaths in patients having been prescribed sildenafil citrate in the first period after the marketing from late March through mid-November 1998. In this period, >6 million outpatient prescriptions were dispensed. Of the 130 confirmed deaths among men (mean age, 64 years) who received sildenafil citrate, 77 had cardiovascular events, including 41 with myocardial infarction and 27 with cardiac arrest. Cause of death was unknown in 48 and non-cardiac in 5 men. The time from drug ingestion to death or onset of symptoms leading to death was <5 hours for 44 men, later the same day; 6 men, the next day; 8 men, two to seven days later; 9 men and unknown for the remainder. Sildenafil produces small but significant increases in the QTc interval in humans. Sildenafil has been reported to cause VT in pigs when administered in combination with a nitric oxide donor. We conclude that our patient had no confirmable cardiac condition other than VT and sildenafil is the only factor which could lead to this.



W37) Literature Review on Thrombolysis in CPR : Muhammad A. Majeed¹, Allison Gammon¹ : 1. ED, nhs, Dudley, United Kingdom.

INTRODUCTION: Objectives: To find out whether we should thrombolyse patients during CPR or not, and if so, in which which group of patients. Methods: Clinical studies in Pubmed from 2001 to 2007 on the efficacy and safety of thrombolysis in CPR were assessed.

RESULTS: Studies which say we should thrombolyse - Thrombolysis Group (4 studies): Year- patients, ROSC, discharge: 2000- 21, 17, 2; 2001- 108, 76, 27; 2001- 40, 27, 6; 2003- 36, 24, 7. In total 205 pts were included and 144 among them had ROSC and 42 (21.4%) were discharged home. In the Non-thrombolysis group (3 studies) Year- patients, ROSC, discharge: 2000- 21, 9, 1; 2001- 216, 110, 33 (15.8%); 2001- 50, 22, 11. In total 287 pts were included and 15% were discharged home. The rationale behind these studies are: There is marked activation of blood coagulation without adequate activation of endogenous fibrinolysis during reperfusion after cardiac arrest. Thrombolysis might also have an impact on cerebral microcirculatory reperfusion during and after cardiopulmonary resuscitation. This effect might be responsible for the exceptionally good neurological outcome. The ROSC, survival after 24 h, survival to hospital discharge, and neurological performance improves with thrombolysis

during CPR. According to recent CPR guidelines, thrombolysis may be considered in cardiac arrest patients with suspected massive PE or as a so-called rescue therapy after unsuccessful conventional CPR in patients with a suspected thrombotic cause of cardiac arrest. During CPR, thrombolysis can help to stabilise patients with pulmonary embolism and myocardial infarction. The results showed that thrombolytic agents significantly improved the rate of return of spontaneous circulation, survival to discharge. However, the patients receiving thrombolysis had a risk of severe bleeding but the studies show that the risk outweighs the benefits. CONCLUSION: Thrombolytic agents during CPR can improve the survival rate to discharge. There should be set guidelines for both ambulance and cardiac arrest team so people can treat without hesitation.

W38) The Emergency Room at Hospital Pedro Hispano – An Organizational Model to Prevent Cardiac Arrest : Madalena Almeida¹, Nuno Sequeria, Gloria Campello, Claudia Diaz, Cristina Granja : 1. Hospital Pedro Hispano, Matosinhos, Portugal.

INTRODUCTION: The purpose of the emergency room is to treat critically ill patients and prevent cardiac arrest in patients presenting with signs of physiological instability. This study has two main goals: 1) to describe the organizational model of the emergency room (ER) at Hospital Pedro Hispano (HPH) based on the 'chain of survival' concept; 2) to report an outcome analysis of the last 2 years. METHODS: Patients admitted to the Emergency Department (ED) of HPH are evaluated according to the Manchester Triage System. Seriously ill patients are coded red and immediately admitted to the ER. Other high risk patients located elsewhere in the ED that may present with signs of physiological instability are also admitted to the ER. This reflects the operational principles of the ER based on the prevention of cardiac arrest. All patients admitted to the ER have an emergency chart. Data were collected from these charts including gender, age, provenience, reason for admission/diagnosis, outcome and destination. RESULTS: Between 2007 and 2008, 1858 patients were admitted to the ER. 55% were male, mean age was 64. 76% of patients were admitted from out of hospital, 16% of which were assisted by the medical emergency system vehicle. Most frequent reasons for ER admission were as follows: disturbances of consciousness (19%), acute respiratory failure (19%), tachycardia (13%), cardiac arrest (9%), seizures (7%), among others. ER mortality was 11% while 89% of the patients improved or stabilized. Cardiac arrest contributed to 71% of the total mortality. 60% of patients were discharged to a monitoring area and only 7% to an intensive care unit. CONCLUSION: Prevention and treatment of causes of cardiac arrest were the main reasons for admission for the ER (disturbances of consciousness, acute respiratory failure, and tachycardia). Cardiac arrest contributed to 9% of the admissions but to 71% of the mortality, which emphasizes the need to prevent it. The organizational model that is presented fits this need and it also may contribute to better use of resources as it enables re-orientation of patients to appropriate levels of care.

W39) Cardiac arrest caused by aortic coarctation and large myocardial infarction in a 16 year old female : Botea Mihai¹, Borcea Hadrian¹, Beres Zsolt¹, Casian Adriana¹, Pop Ovidiu¹ : 1. Emergency Department, Oradea Emergency County Hospital, Oradea, Romania.

BACKGROUND: Sudden cardiac death in a young person is rare. Sudden cardiac death (SCD) is a tragic and devastating episode, especially when it occurs in a young person. In contrast to older persons, where atherosclerotic heart disease is the most common cause, cardiomyopathies, myocarditis and coronary artery anomalies are more common in the young. Although coronary ischemic heart disease accounts for a majority of these deaths across all ages, many other etiologies contribute to this problem when it occurs in the young, defined as those aged ≤ 35 years, where coronary artery disease is far less common than in older age groups. In addition, the awareness that most causes of SCD in the young are inherited, means family screening of relatives of young SCD victims allows identification of previously unrecognized at-risk individuals thereby enabling prevention of SCD in relatives. **CASE:** We describe the case of a 16-year-old girl who sustained a cardiac arrest and died after cardiopulmonary resuscitation (CPR). The patient had no previous cardiac pathology. The paper describe the resuscitation process. Because the ECG showed ST elevation, we first considered a possible myocardial infarction the cause for this cardiac arrest. Unfortunately the cardiac resuscitation was not successful. The autopsy report reveals findings with an extended myocardial infarction, many large atheromatous plaques on coronary arteries and aortic cross, and an aortic coarctation. **DISCUSSION:** The most frequent coronary and aortic anomalies are of no clinical significance, but some are associated with an increased risk of sudden death. The cause of these anomalies origin and possible mechanism for sudden death is discussed. We conclude that congenital anomaly together with acquired atheroscleromatous degradation should be considered with high risk of death and major cardiac events in young people. The second part of this paper describe similarly cases presented in literature.

W40) A Training Death: Hard CPR : Carlos Del Pozo¹, M. L. Lopez Grima¹, Belen Salvador¹, Begoña Arcos¹, Eva Salvo¹, Amparo Valero¹ : 1. Emergency, Hospital Universitario Dr Peset, Valencia, Spain.

CASE: A 54 yr old male teacher, admitted to ER, with decreased consciousness, sweating and vomiting one hour after lunch. The previous morning planting trees with his pupils, asymptomatic. No known toxic exposure. Hypertension (10 years) Amlodipine, Spironolactone and Eprosartan. BP 96/43mmHg, Sat100%, Pulse:66 pm. The patient presents with thoracic pain and sweating, worsening neurologically. EKG: SR 56 bpm, long QT (60 m/seg), left anterior hemiblock, depressed ST 3-4 mm v4-V6. Monitored, BP 64/35, VT, treated with cardioversion (200J), starts Torsade de Pointes, with no pulse, administered magnesium 1,5 gr+defibrillation 200J. The monitor shows VT, effective pulse and BP 86/45. Intubation with succinylcholine and Dopamine initiated at same time. Lab Results: Normal blood count, pH 7,53 (bicarbonate 30), BUN 60 mg/dl, creatinine 1,6 mg/dl, potassium 1,9 mmol/L. Cholinesterase levels decreasing in 2 samples determined during the CPR, but not to levels clearly indicative of organophosphate poisoning. Administration of iv potassium started. The patient presented VF and CPR started (Defibrillation 200j, epinephrine 1/3 min & external heart massage for 3 cycles, with amiodarone 300mg, bicarbonate 1/6 M 250cc and Norepinephrine, result of asystole, keeping with massage, epinephrine 1/3min, for ten more minutes. On monitor sinus rhythm, is admitted to ICU. Echocardiography: Left ventricular hypertrophy, no contractility defects. 1 h later a new episode of VF occurred; initiating advanced CPR, stopped without success in 40 min. **AUTOPSY:** Coronary arteriosclerosis (75% stenosis), adrenal cortical adenoma. Conclusion: Acute coronary syndrome as cause of death.

THEORIES: We think an ACS is not probable, serial troponins were negative, and the echocardiography showed no contractility defects and no myocardial necrosis was found. We think the patient died from hypokalemia, due to hyperfunction of the adrenal adenoma (Conn Syndrome). We suggest a possible intoxication (ingestion) with organophosphate, added to the previous ionic alteration that made the CPR difficult and unsuccessful.

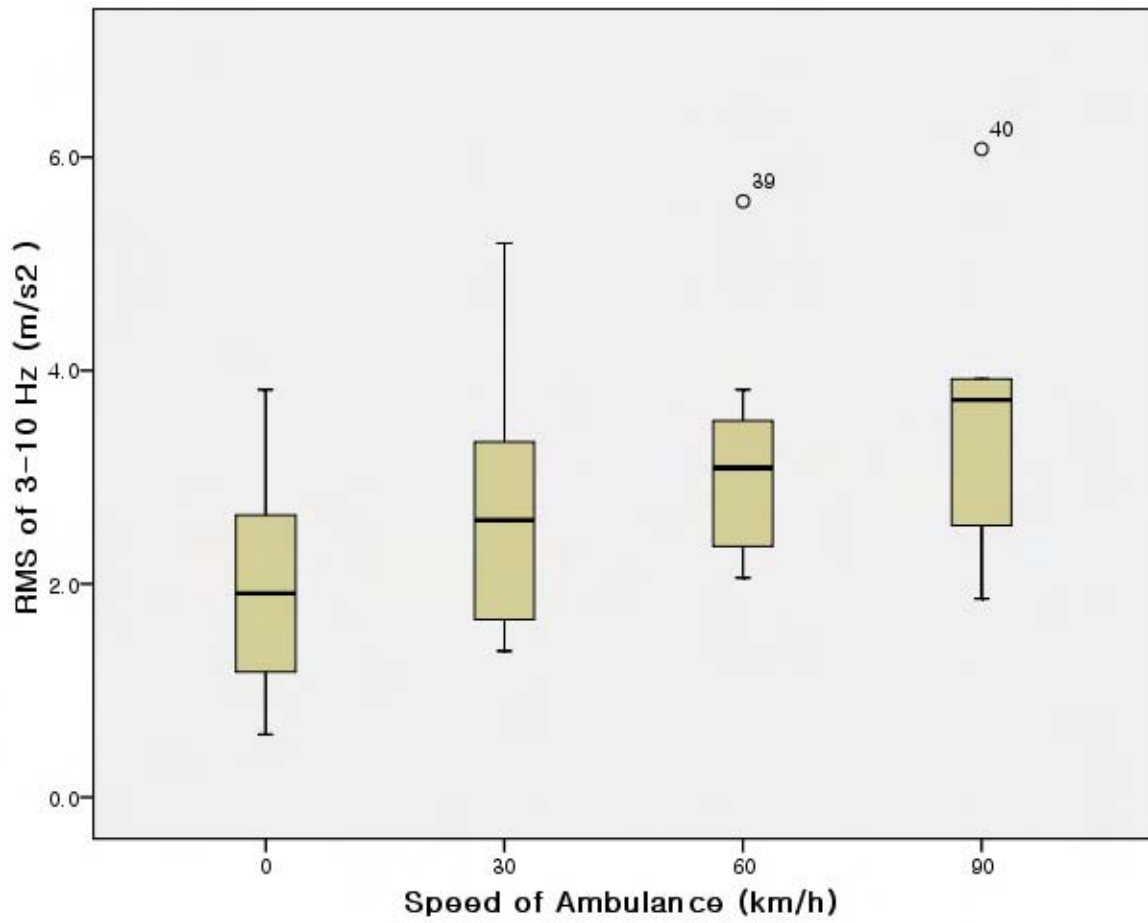
W41) The Effect of Vehicle Speed on Closed Chest Compression in Ambulance : Tae Nyoung Chung¹, Sun Wook Kim¹, Seung Ho Kim¹ : 1. Emergency Medicine, Yonsei University, College of Medicine, Seoul, Korea, South.

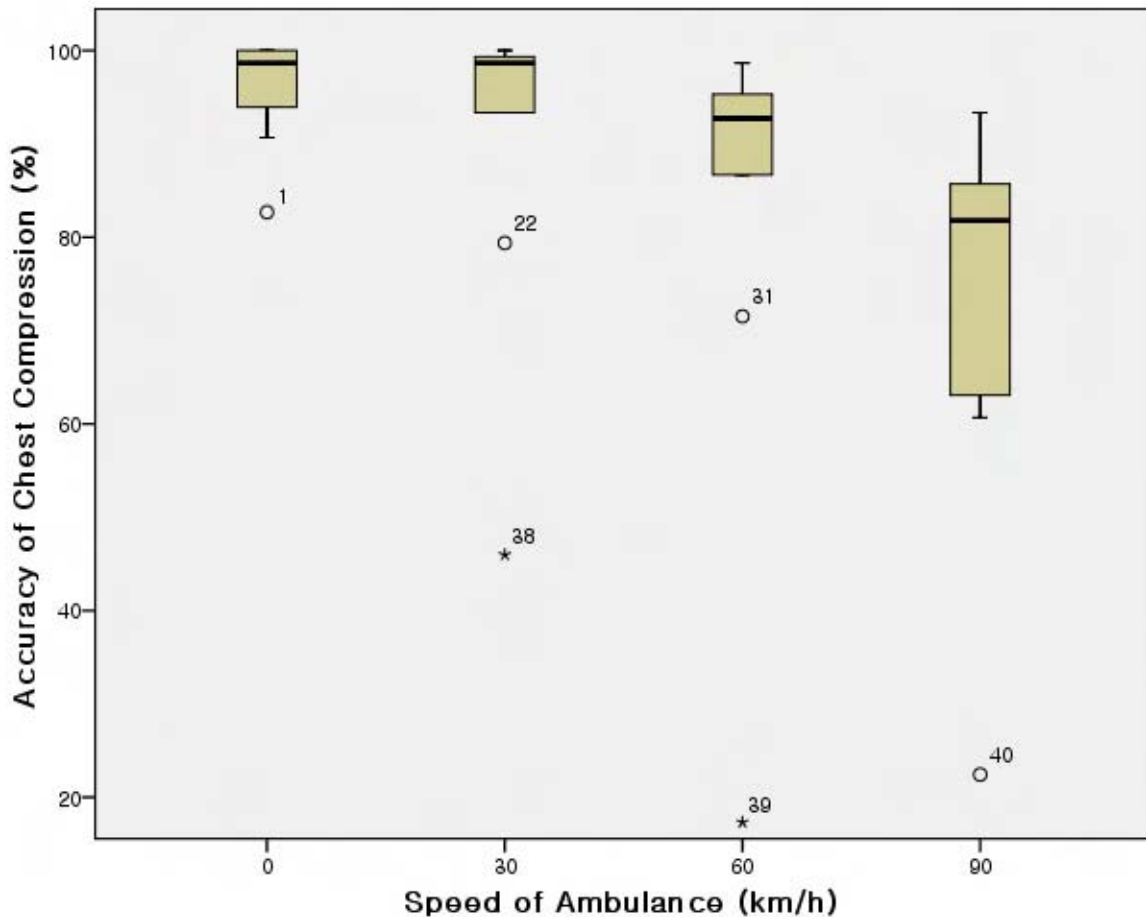
INTRODUCTION: In out-of-hospital cardiac arrest setting, there are many cases of cardiopulmonary resuscitations (CPRs) which are performed during ambulance transport. It is important to get to the hospital quickly while maintaining the quality of CPRs. But it can be contradictory due to the fact that high speed of the ambulance possibly interferes with the chest compression. We aimed to assess how the speed of ambulance affects the chest compression.

METHODS: 5 cycles of CPRs were performed to the Resusci Anne manikin by experienced emergency medical technicians (EMTs) in an ambulance running at the speed of 0km/h (stopped), 30km/h, 60km/h, and 90km/h. Each speed level was randomly assigned. A vibration sensor near the compression point of the manikin recorded the acceleration data during CPR in real time. This real-time data was analyzed by frequency using fast Fourier transform (FFT). The components above 10Hz were excluded because they were thought to be made by the vibration of vehicles, not by chest compressions. Because recommended compression rate of 100/minute is 1.67 Hz in frequency and is analyzed as a 2Hz component, we treat it as a standard frequency. We calculate the root mean square (RMS) of the acceleration from 3Hz to 10Hz component and treat it as a measure of inaccurate & unnecessary movement. We compare 2Hz component, RMS of 3Hz to 10Hz component, and chest compression accuracy according to the guideline 2005 reported by Resusci Anne skill meter by each speed groups.

RESULTS: The median accelerations of 2Hz were 2.45(0.98-3.23), 2.70(2.16-3.33), 3.09(2.16-4.02), 3.19(2.25-3.92) m/s² each, at the speed of 0, 30, 60, 90 km/h. The median RMSs of 3-10Hz were 3.23(0.59-3.82), 2.60(1.37-5.19), 3.09(2.06-5.59), 3.72(1.86-6.08) m/s² each. The median accuracies of chest compression were 98.67(82.67-100.00), 98.67(46.00-100.00), 92.73(17.33-98.67), 81.79(22.44-93.33) % each. Analysis of difference using Kruskal-Wallis test showed significance for RMS of 3-10Hz (p=0.048), accuracy (p=0.001).

CONCLUSION: High speed of ambulance is associated with increase in unnecessary compression movement and decrease in accuracy of chest compression.





W42) In-hospital Cardiopulmonary Resuscitation in a Portuguese Secondary Level Hospital : Caroline Dahlem¹, Rosa Sousa¹, Juan Martinez¹, Luis Vega¹, Jorge Teixeira¹ : 1. Centro Hospitalar Entre Douro e Vouga, Santa Maria da Feira, Portugal.

INTRODUCTION: The introduction of crash teams to provide adequate and prompt management of in-hospital cardiopulmonary resuscitation (CPR) has been an important issue in the last few years, improving survival and reducing morbidity. The aim of this work is to evaluate the response of the resuscitation team (RT) in our hospital and characterize the population of patients and their outcomes. **METHODS:** We retrospectively reviewed the RT records between January 1st 2005 and December 31st 2008 and all valid data were included: inpatients, outpatients and other events that occurred in non-clinical areas of the hospital. **RESULTS:** During the study period the RT was activated for 146 events. 56% of the patients were male and the average age was 64.5 years. The main location of events was the non-critical wards (72.3%) with no difference among medical or surgical

wards; 21.3% of events occurred at the outpatient clinics and 6.4% in non-clinical areas. Correct activations represented 73%, of which 46% corresponded to peri-CPR patients and only 32% were due to primary cardiac causes. The immediate survival rate was 65%; 13% of patients had no indication for advanced life support. 44% of correct activations were made during weekends or nights; time to arrival of RT was difficult to evaluate due to incomplete data in the records. When indicated, basic life support (ventilation and/or chest compression) was in course by the ward staff in 84% of cases, at arrival of the RT. CONCLUSIONS: Almost half of the correct activations of the RT corresponded to peri-CPR patients, which contributes to a high survival rate in the group. It is not only important to have a well-trained RT but also to ensure that all clinical staff can recognise patients at risk of cardiac arrest and are able to initiate basic life support when CPR occurs.

W43) Specialized Basic Life Support (BLS) Improves Survival Rate

SMURD Bucharest, Romania : Sorina M. Sovar¹, Daniel M. Florea¹, Adina Vasilache¹, Liliana Neacsu¹, Mariana Cojocaru¹, Camelia Dinu¹ : 1. UPU SMURD, Bucharest Emergency Clinical Hospital, Bucharest, Romania.

INTRODUCTION: In May 2009 SMURD Bucharest (Mobile Emergency Service for Extrication and Resuscitation) celebrates 1 year of activity. The authors try to prove the importance of early BLS for the improvement of survival rate in cardio-pulmonary arrest (CPA) patients. **METHODS:** During this period SMURD answered 28300 medical distress calls and registered 888 (3.13%) CPA, initiating cardiopulmonary resuscitation (CPR); all are included in this study. **RESULTS:** 40% of CPA patients were between 50 and 70 years old and 42% above the age of 70; 68% male patients; 90% cases with medical cause CPA, 10% with traumatic cause CPA. Evaluated cardiac arrest rhythms were: asystole (84%), ventricular fibrillation (8%), pulseless electrical activity (8%). In 483 cases a first aid (FA) team arrived on site and initiated BLS. Later, ALS (advanced life support) was initiated when a resuscitation and intensive care (RIC) team arrived at the scene. In 405 cases a RIC team arrived on site from the beginning starting early ALS.

ROSC (return of spontaneous circulation) occurred in 24.22% (117 patients) of CPA cases when CPR started with BLS and 14.81% (60 patients) of CPA cases when CPR started with ALS. ROSC rate was 19.93% (177 patients). **Discussion:** FA teams are qualified for medical first aid: ventilation using self-inflating bag and face-mask with oxygen admission, chest compressions and AED (automated external defibrillator). FA teams are more numerous than RIC teams and cover smaller areas having better response times, 6-8 minutes (7 min). 84% of the cases presented with asystole as the first monitored rhythm. In our opinion this is because the people that discover these victims have difficulty recognizing CPA, delaying the emergency call. FA teams initiate CPR in most cases with few well determined exceptions. RIC teams as first responders may take more time to arrive at the scene, 6-12 minutes (9 min), because they have to travel greater distances. **CONCLUSION:** Early BLS can improve significantly the ROSC rate and the chance for survival. The results can be improved by increasing the number of FA teams and by extending their medical training.

W44) Specialized Basic Life Support (BLS) Improves Survival Rate

SMURD Bucharest, Romania : Daniel M. Florea¹, Sorina M. Sovar¹ : 1. Emergency Clinical Hospital, Bucharest, Romania.

INTRODUCTION: In May 2009 SMURD Bucharest (Mobile Emergency Service for Extrication and Resuscitation) celebrates 1 year of activity. We aim to prove the importance of early BLS for the improvement of survival rates in cardio-pulmonary arrest (CPA) patients. **METHODS:** During this period SMURD answered 28300 medical distress calls and registered 888(3.13%) CPA initiating cardiopulmonary resuscitation (CPR). All are included in this study. **RESULTS:** 40% of CPA patients were between 50 and 70 years old and 42% above age 70; 68% male patients; 90% cases with medical cause CPA, 10% with traumatic cause CPA. Evaluated cardiac arrest rhythms were: asystole (84%), ventricular fibrillation (8%), pulseless electrical activity (8%). In 483 cases a first aid (FA) team arrived on site and initiated BLS. Later, ALS (advanced life support) was initiated when a resuscitation and intensive care (RIC) team arrived at the scene. In 405 cases a RIC team arrived on site from the beginning and starting early ALS. ROSC (return of spontaneous circulation) was obtained in 24.22% (117 patients) of CPA cases when CPR was started with BLS and 14.81% (60 patients) of CPA cases when CPR started with ALS. ROSC rate was 19.93% (177 patients). **CONCLUSIONS:** FA teams are qualified for medical first aid: ventilation using self-inflating bag and face-mask with oxygen admission, chest compressions and AED (automated external defibrillator). FA teams are more numerous than RIC teams and they cover smaller areas having better response times, 6-8 minutes (7 min). Also 84% of the cases presented asystole as the first monitored rhythm. In our opinion this is because the persons that discover these victims have difficulty in recognizing CPA, delaying the emergency call. FA teams initiate CPR in most cases with few well determined exceptions. RIC teams as first responders may take more time to arrive at the scene, 6-12 minutes (9 min), because they have to travel across greater distances. Early BLS can improve significantly the ROSC rate and the chance for survival. The results can be improved by increasing the number of FA teams and by extending their medical training.

W45) Detrended Fluctuation Analysis Predicts Successful Defibrillation for Out-of-Hospital Ventricular Fibrillation Cardiac Arrest : Patrick Chow-In Ko¹, Lian-Yu Lin¹, Men-Tzung Lo², Chen Lin², Kun Hu³, Matthew Huei-Ming Ma¹ : 1. National Taiwan University Hospital, Taipei, Taiwan. 2. Research Center for Adaptive Data Analysis, National Central University, Taoyuan, Taiwan. 3. Division of Gerontology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, USA.

INTRODUCTION: Repeated failed shocks for ventricular fibrillation (VF) in out-of-hospital cardiac arrest (OOHCA) can worsen the outcome. Clinically it is very important to rapidly distinguish between early and late VF. Objective: We hypothesized that VF waveform analysis based on detrended fluctuation analysis (DFA) can help predict successful defibrillation. **METHODS:** Design, Setting, Patients: Electrocardiogram (ECG) recordings of VF signals from automated external defibrillators (AED) were obtained for subjects with OOHCA in Taipei city. To examine the time effect on DFA, we also analyzed VF signals (> 10 minutes) in subjects who experienced sudden cardiac death during Holter study from Physionet. **Measurements:** Waveform parameters including root-mean squared (RMS) amplitude, mean amplitude, amplitude spectrum analysis (AMSA), frequency analysis as well as fractal

measurements including scaling exponent (SE) and DFA were calculated. A defibrillation was regarded as successful when VF was converted to an organized rhythm within 10 seconds after each defibrillation. RESULTS: A total of 155 OOHCA subjects (37 successful and 118 unsuccessful defibrillation) with VF were included for analysis. Among the VF waveform parameters, only AMSA (7.61 ± 3.30 vs. 6.30 ± 3.13 , $P = 0.030$) and DFA?2 (0.38 ± 0.24 vs. 0.49 ± 0.24 , $P = 0.005$) showed significant difference between subjects with successful and unsuccessful defibrillation. The area under curves for AMSA and DFA?2 were 0.63 (95% CI = 0.52-0.73) and 0.65 (95% CI = 0.54-0.75) respectively. Among the waveform parameters, only DFA?2, SE and dominant frequency showed significant time effect. CONCLUSIONS: The VF waveform analysis based on DFA could help predict first-shock defibrillation success in patients with OOHCA. The clinical utility of the approach deserve further investigation.

Table 1. Parameters of waveform analysis for ventricular fibrillation in subjects with successful and unsuccessful defibrillation

	Organized (N=37)	Asystole and VF (N=118)	P
Amplitude measures			
Mean amplitude, mv	0.11 (0.05)	0.10 (0.06)	0.133
RMS amplitude, mv	0.13 (0.06)	0.11 (0.06)	0.130
Frequency measures			
Dominant frequency, Hz	3.93 (0.93)	4.01 (1.19)	0.595
Mean frequency, Hz	5.15 (0.74)	5.35 (0.82)	0.181
Median frequency, Hz	4.23 (1.25)	4.40 (1.02)	0.415
AMSA	7.61 (3.30)	6.30 (3.13)	0.028
Fractal measures			
DFA?1	1.72 (0.10)	1.73 (0.08)	0.932
DFA?2	0.38 (0.24)	0.49 (0.24)	0.013

Abbreviations. RMS, root-mean-square; AMSA, amplitude spectrum analysis; DFA, detrended fluctuation analysis; SE, scaling exponent.

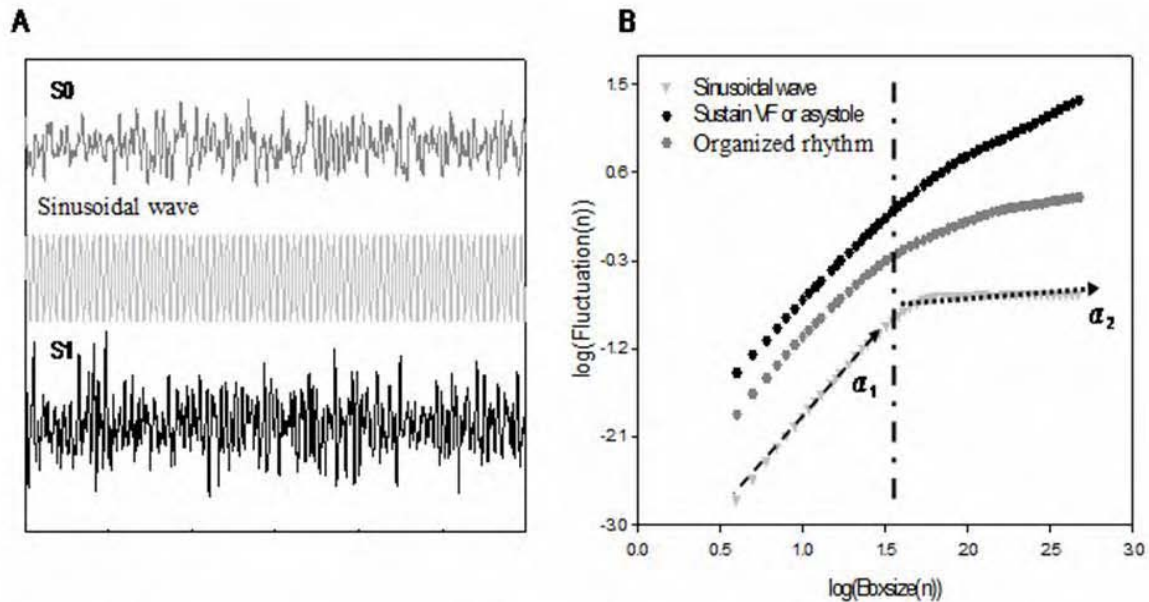


Figure 1A. Two ventricular fibrillation (VF) waveforms. S0 indicated a shockable VF and S1 indicated a non-shockable VF (persisted VF or asystole after defibrillation). A sinusoidal wave with similar oscillation frequency was also demonstrated. **Figure 1B.** Detrended fluctuation analysis of two VF waveforms and a sinusoidal wave with similar frequency. Two scaling exponents (slopes) of DFA were called DFA α_1 and DFA α_2 .

W46) Return of Spontaneous Circulation After Sudden Cardiac Arrest Using a Continuous 10:1 Compression:Ventilation Sequence : James V. Dunford¹, Criss Brainard², Roger Fisher², Ekta Patel³, Ginger Ochs², Jeff Clyons², Dan Davis¹ : 1. Emergency Medicine, University of California San Diego Medical Center, San Diego, CA, USA. 2. San Diego Fire-Rescue Department, San Diego, CA, USA. 3. San Diego Medical Services Enterprise, San Diego, CA, USA.

INTRODUCTION: The 2005 Guidelines recommend that CPR should deliver (1) chest compressions at a rate of 100/minute while minimizing interruptions and (2) ventilations at a rate of 10 per minute. Even brief interruptions of compressions reduce coronary blood flow and a period of re-priming is needed to restore optimal flow. A 30:2 sequence is recommended until placement of an advanced airway followed by a 10:1 sequence. Our objective was to assess the impact on return of spontaneous circulation (return of measurable blood pressure, BP) when a continuous 10:1 sequence was employed. **METHODS:** The City of San Diego dispatches ALS first responders and ALS ambulances to all cardiac arrests. Beginning in May 2005, 450 paramedics (PM) were trained to (1) perform uninterrupted, high quality chest compressions at 100/minute (2) reduce ventilations to 10/minute and interpose them between

each 10th chest compression (3) rotate the rescuer performing compressions every 2 minutes to avoid fatigue (4) rapidly establish intravenous access and administer epinephrine (5) delay placement of an advanced airway until 3 cycles of compressions were administered. By May 2006, all 600 firefighters were also trained. We queried EMS records for all adults > 18 years for whom CPR was initiated (initial BP = 0) and whose last BP prior to arrival was > 0. RESULTS: see Table. CONCLUSIONS: In our all-ALS system, the implementation of a convenient-to-train and implement continuous 10:1 compression:ventilation CPR sequence resulted in a 32.6% improvement in ROSC. This approach minimizes interruptions in compressions, avoids overventilation and achieves the target 100 compressions and 10 ventilations per minute.

	1/1/02 - 2/28/05 (Old CPR)	5/1/05 – 3/31/06(All PM Trained)	5/1/06 – 5/12/09 (All EMT & PM Trained)
ROSC	154	95	414
Total arrests	1873	982	3395
% ROSC	8.2%	9.7%	12.2%

ROSC (defined as return of measurable BP prior to arrival at hospital)

W47) Public awareness, training and willingness to perform

bystander CPR in south east Scotland : Laura Bannister¹, Raj Ghose¹, Alasdair Gray¹, Richard M. Lyon¹ : 1. Emergency Department, Royal Infirmary of Edinburgh, Edinburgh, United Kingdom.

INTRODUCTION: Out-of-hospital cardiac arrest (OHCA) remains a leading cause of mortality and severe neurological disability across Europe. Early, effective bystander cardiopulmonary resuscitation (CPR) is required to maintain cerebral perfusion prior to arrival of Emergency Medical Services. Community resuscitation training aims to increase the proportion of the population capable of delivering effective CPR. Little is known about public attitudes towards CPR and the degree of CPR training in Scotland. Aims: We aimed to determine the prevalence of CPR training in south east Scotland and possible factors preventing individuals from receiving CPR training. We sought to investigate public awareness, knowledge and attitudes towards CPR and identify factors that may prevent bystanders from initiating resuscitation. METHODS: Prospective, observational questionnaire survey of patients and relatives attending a university teaching hospital. RESULTS: 505 people completed the questionnaire, 48% were males with an approximately equal spread over all adult ages. 256 (51%) were trained in CPR, with the majority (52%) having received training in the workplace. Of those not trained in CPR, 214(84%) cited lack of opportunity as the reason for not undertaking training. The highest proportion (36%) had received CPR training more than 5 years ago. Of those who had undertaken any CPR training, only 25% identified the correct compression:ventilation ratio. Limited knowledge was cited as the commonest (24%) reason for being unwilling to initiate CPR. CONCLUSION: A reasonable proportion of lay people reported having been trained in CPR but training was frequently out-of-date and did not

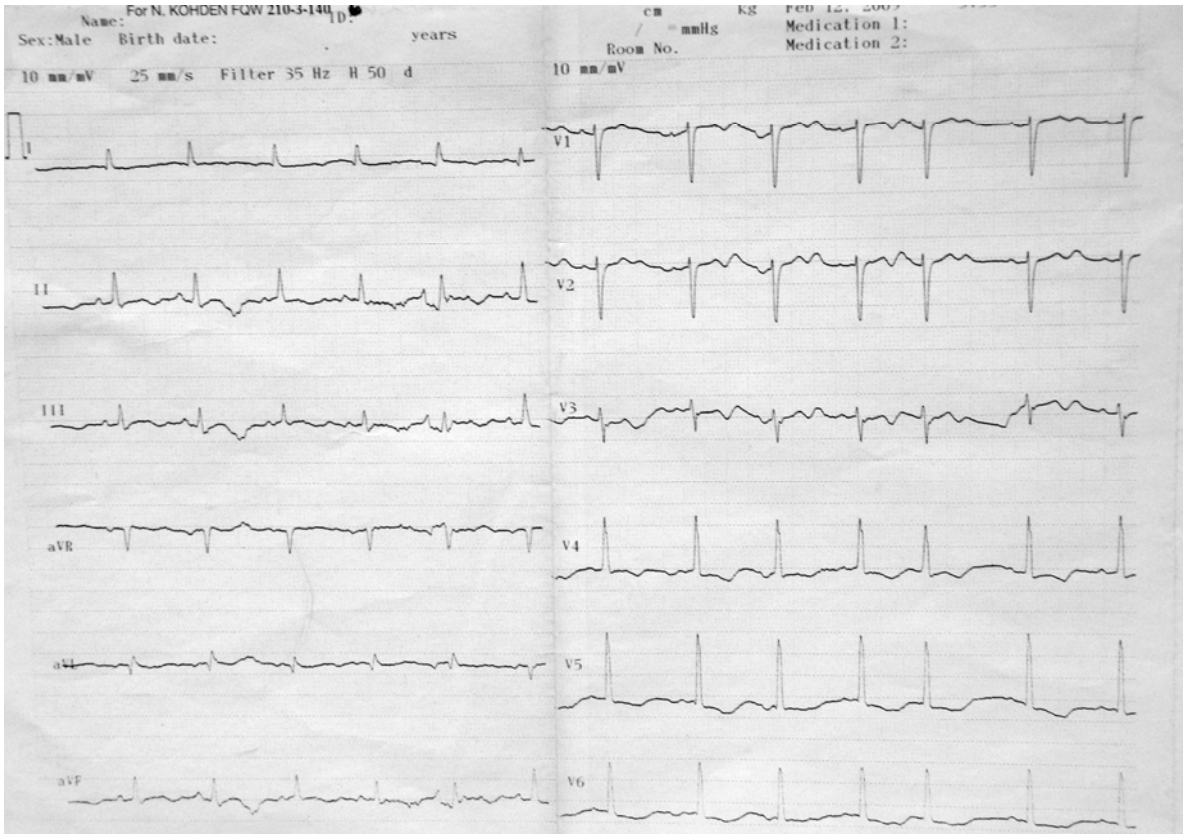
confer long term theoretical knowledge. If the proportion of lay persons capable of delivering effective CPR is to be increased community training opportunities with regular revision sessions need to be made available.

W48) Delayed total blindness after cardiac arrest : Jung Hee Wee¹, Kyu Nam Park¹, Han Joon Kim¹, Mi Kyung Kwon¹ : 1. Seoul St. Mary's Hospital, Seoul, Korea, South.

Hypoxic-ischemic encephalopathy accompanying cardiac arrest is a common cause of long-term neurological dysfunction. Neurological impairment after cardiac arrest depends on the degree of brain damage suffered during the arrest and ischemic-reperfusion period, and can range from mild cognitive deficits to severe motor and cognitive deficits. CASE: A 35 yr old woman was transferred to the emergency department (ED) comatose. An hour earlier, the patient received general anesthesia with propofol for plastic surgery. 30 min after anesthesia, she became bradycardic and hypotension, and had cardiac arrest. She was immediately given ALS; 15 min after cardiac arrest she developed ventricular fibrillation and was defibrillated. After defibrillation she had ROSC with total arrest time of ~ 15 minutes. At ED, the initial BP was 122/100mmHg, HR 92/min, RR 20/min, and body temperature 36.6°. She was in a coma (GCS 3) without pupillary light reflex. Physicians induced therapeutic hypothermia, infused sedative and neuromuscular blocker. Hypothermia was maintained around 33° for the first 24h and she was slowly rewarmed over the next 24h. On day 3, somatosensory-evoked potential (SEP), visual-evoked potential (VEP) showed no abnormal findings. After rewarming, the patient responded to verbal stimulation and was extubated. Neurologically she was mentally alert, but decreased motor system (grade 2~3). She was able to count fingers with her right eye, while she was blind in her left eye. Ophthalmologist consult claimed there was no ophthalmologic abnormality. Over time her vision declined no light perception. On day 6th, she had absolute blindness. Diffusion weighted brain MRI, showed diffuse cortical to subcortical lesions involving both parieto-occipital regions and superior frontal regions indicating diffuse hypoxic brain injury. She was transferred to rehabilitation is currently totally blind and double hemiplegic state. DISCUSSION: Among survivors of cardiac arrest, neurological outcomes can be divided into those who do and do not regain consciousness. To improve and to predict outcome, physicians have tried many methods (mild therapeutic hypothermia, electrophysiologic, biochemical, radiologic investigation). Several cases of blindness after cardiac arrest have been reported, called cortical blindness, characterized by complete loss or gross impairment of vision, with normal pupillary light reflex and normal fundi. Incomplete visual loss is more common than complete visual loss and many patients recover their vision. In this case, because ischemic time was short (15min), ALS was delivered immediately and therapeutic hypothermia was induced rapidly, physicians expected good neurologic outcome. After regaining consciousness, however, the patient showed neurologic deficits in vision and motor.

W49) Hypokalemia Induced Ventricular Fibrillation : Firat Bektas¹, Secgin Soyuncu¹, Havva Neslihan Korkmaz¹ : 1. akdeniz university, Antalya, Turkey.

BACKGROUND: Electrolyte abnormalities can produce life-threatening arrhythmias. Potassium (K) is a well-known cause of these type arrhythmias. Either an increase or a decrease in plasma K⁺ might be arrhythmogenic. Especially, low plasma K concentration has been considered as a risk factor for ventricular fibrillation. **CASE:** We report a 61-year-old woman with ventricular fibrillation which may be related to severe hypokalemia caused by acute gastroenteritis and usage of diuretics.



W50) Out-of-hospital resuscitation: Numbers and outcome : Arthur Rosendaal¹, Maro Sandel¹ : 1. Haga hospital, The Hague, Netherlands.

INTRODUCTION: In December 2005 new guidelines for reanimation were introduced by the European Resuscitation Council (ERC). Within a year these guidelines were also used in Haga Hospital, location Leyweg and location Sportlaan. In March 2006 our Emergency Department (ED) at Haga Hospital, location Leyweg in The Hague expanded due to a new department for coronary disease only. The amount of cardiac patients has increased ever since they started Percutaneous Coronary Intervention (PCI) a few years earlier whereas surrounding hospitals do not have these capabilities. Furthermore the smaller ED at Haga Hospital, location Sportlaan

has been closed for cardiac patients. Has there been an improvement in survival rates since these recent changes over the last years? Is there an increase in the numbers of out-of-hospital reanimation? We evaluated numbers and outcome of out-of-hospital reanimation. **METHODS:** We retrospectively analysed all patients arriving in a reanimation setting at the ED. Data was collected from January 2007 until December 2008 from the Electronic Patient File (EPD). All patients with out-of-hospital reanimation were included. All patients dead-on-arrival were excluded. Data endpoints are survival rates after discharge from the ED and discharge from the hospital. All data was collected and analysed by one researcher. **RESULTS:** Comparison with previous results by R.A.M. Verbeek will be made. He showed 52 resuscitations during the year 2003 and 2004 with a survival rate of respectively 67% and 25%, measured after discharge from the ED and hospital. Follow-up was done after 12 months and showed a survival rate of 17%. **CONCLUSION:** In the literature several survival rates are reported. Some studies report survival rates between 0-10% whereas others measured rates of nearly 25%. Meta-analysis of different studies showed an average of 8% survival after resuscitation. Haga Hospital used to have a relatively high survival rate of 25%. These numbers might be influenced by the small group of patients being measured at the time.

W51) Quality and rescuer's fatigue in CPR: simulation of repeated chest compression : Jaiwoog Ko¹, Sangwon Chung¹, Inbyung Kim¹, Junseok Lee¹, Yoseob Park¹ : 1. Myongji Hospital, Kwandong Univeristy College of Medicine, Koyang, Kyunggi , Korea, South.

INTRODUCTION: It is controversial whether the fatigue of rescuer may affect on quality of chest compression (CC) in cardiopulmonary resuscitation (CPR). There are few reports about CPR quality, especially when rescuers perform CC repeatedly. We investigated the quality of CC and the fatigue effect, when rescuers perform CC repeatedly. **METHODS:** Health care providers, who were healthy and volunteered were selected. Three steps were defined according to the numbers of person who performed CC in CPR. Every participant had 2 minutes CC time and 5 seconds interval time (time for circulation check) in all steps. In step I (2-persons CC), each participant performed 2 minutes CC and paused for 2 minutes 5 seconds. In step II (3-persons CC), each participant paused for 4 minutes 10 seconds. In step III (4-persons CC), each participant paused for 6 minutes 15 seconds. CC and pause was done alternatively in each step for 30 minutes. Resusci Anne with PC skill report system (manufactured by Laerdal) was used for check of CC quality. Visual analogue scale (VAS, scale:0 to 10) and heart rate were recorded after end of each step. **RESULTS:** 25 health care providers (M:F 15:10) participated. Effective compression rate (ECR) was defined as (numbers of effective CC/numbers of total CC). ECR was 82.90 ± 3.15 , 80.05 ± 4.04 , 72.03 ± 6.25 in step I, II, III ($p < 0.05$). ECR did not decrease with repeated CC. VAS increased with repetition of CC and higher in step I than in step II or III ($p < 0.05$). Mean heart rate was 124.45 ± 15.19 , 119.95 ± 19.38 , 123.47 ± 19.01 per minute in step I, II, III. In each step, heart rate increased as total numbers of CC increased, but there was no statistical significance between the steps. **CONCLUSION:** If 2-rescuers should provide chest compression, the rescuers may feel fatigued easily. But, if the rescuers may be healthy and experienced in CPR, they may perform chest compression effectively for about 30 minutes.

CPR quality & fatigue in each step

	ECR*	Velocity*	HR	VAS*
Step I	82.90±3.15	103.60±5.22	124.45±15.19	6.15±0.79
Step II	80.05±4.04	99.84±7.07	119.95±19.38	5.46±0.58
Step III	72.03±6.25	100.07±6.58	123.47±19.01	5.04±0.70

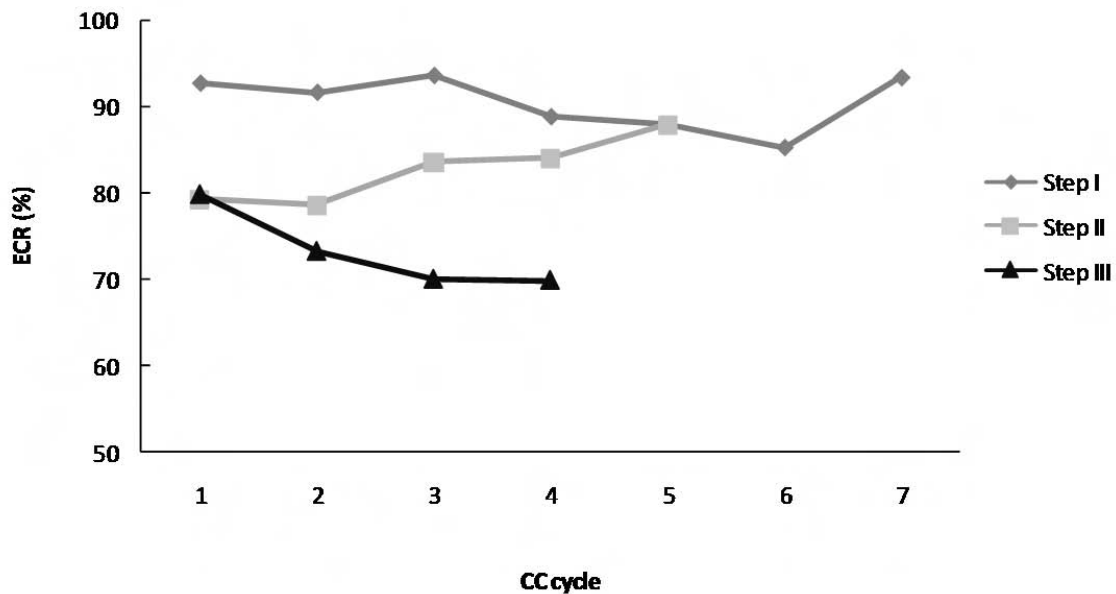
*: p<0.05

ECR: effective compression rate

Velocity: compression count per minute

HR: heart rate

VAS: Visual anaolgue scale (0~10)



W54) Late Neurological Recovery after Prolonged Pre-hospital Cardiac Arrest : Cristian Boeriu¹, Sorana Teodora Truta², Peter Gordon³ : 1. Emergency Department, University of Medicine and Pharmacy Targu Mures, Targu Mures, Mures, Romania. 2. Mures County Emergency Hospital, Targu Mures, Mures, Romania. 3. New York University School of Medicine/Bellevue Hospital Center, New York, NY, USA.

BACKGROUND: We present a case of a normothermic young male who sustained a cardiac arrest, underwent prolonged resuscitation, did not receive induced hypothermia, and experienced a substantial, although delayed, neurological recovery. **CASE:** A 15 year old male without any past medical history except for an episode of syncope two years prior, with a

negative evaluation, was found by his mother unconscious. The patient had sustained an additional, brief, witnessed episode of loss of consciousness 24 hours earlier. EMS was called and encountered the patient five minutes after the initial call in pulseless ventricular tachycardia. The patient was immediately defibrillated and went into ventricular fibrillation. The patient underwent pre-hospital resuscitation for 50 minutes until there was a return of spontaneous circulation. The patient was brought to the emergency department with a GCS of 3. Echocardiography in the emergency department revealed an ejection fraction of 25%. Within several hours the patient had a GCS of 6. The patient remained with a GCS of 6 until hospital day 30. Between hospital days 30 and 42 the patient's GCS increased to 9-10. Between hospital days 43 and 46 the GCS increased to 15. The patient was discharged to a rehabilitation facility on hospital day 69 and returned to school 4 months after experiencing cardiac arrest. During this hospitalization the patient underwent electrophysiological studies and no etiology for the cardiac arrest was found. The patient was discharged home with an implantable defibrillator.

W55) Ventricular aneurysm as a cause of cardiac arrest in young men: a case report : Maria Jose Soto Alvarez¹, J. Heredia-Quicios¹, R. Arencibia-Lopez¹, K. Molina-Frometa¹, J. Mata¹, C. Salgado-Rodriguez¹ : 1. Emergency Room, Hospital Santa Caterina. Salt. Girona, Girona, Spain.

BACKGROUND: Whenever there is a young person in cardiac arrest, the most frequent causes considered are in primary electrical disorders of the heart (arrhythmogenic dysplasia, abnormal repolarization,...) and ischemic heart disease. Sometimes we find a rare and amazing etiology. **CASE:** We report the case of a 23 years man from Gambia without a medical history or known toxic habits; who presented with a sudden episode of dyspnea and low retrosternal pain. Upon arrival to the Emergency Room, cardiopulmonary arrest and electrical activity without pulse occurred. Maneuvers of basic and advanced CPR were initiated with torpid evolution, presenting the patient sustained ventricular fibrillation resistant to repeated cardioversion both electrical and pharmacological. The death is certified 40 minutes later with the diagnosis of acute pulmonary edema of uncertain origin. Clinical autopsy was performed with diagnosis of primary ventricular giant aneurysm. **DISCUSSION:** A literature review shows the rarity of ventricular aneurysm in young men. **Conclusion:** It is sometimes necessary to think in rare cases with a cardiac arrest in young persons. In cases where there is a mechanical disturbance Eco-Fast might have a role in diagnosis and disease management.

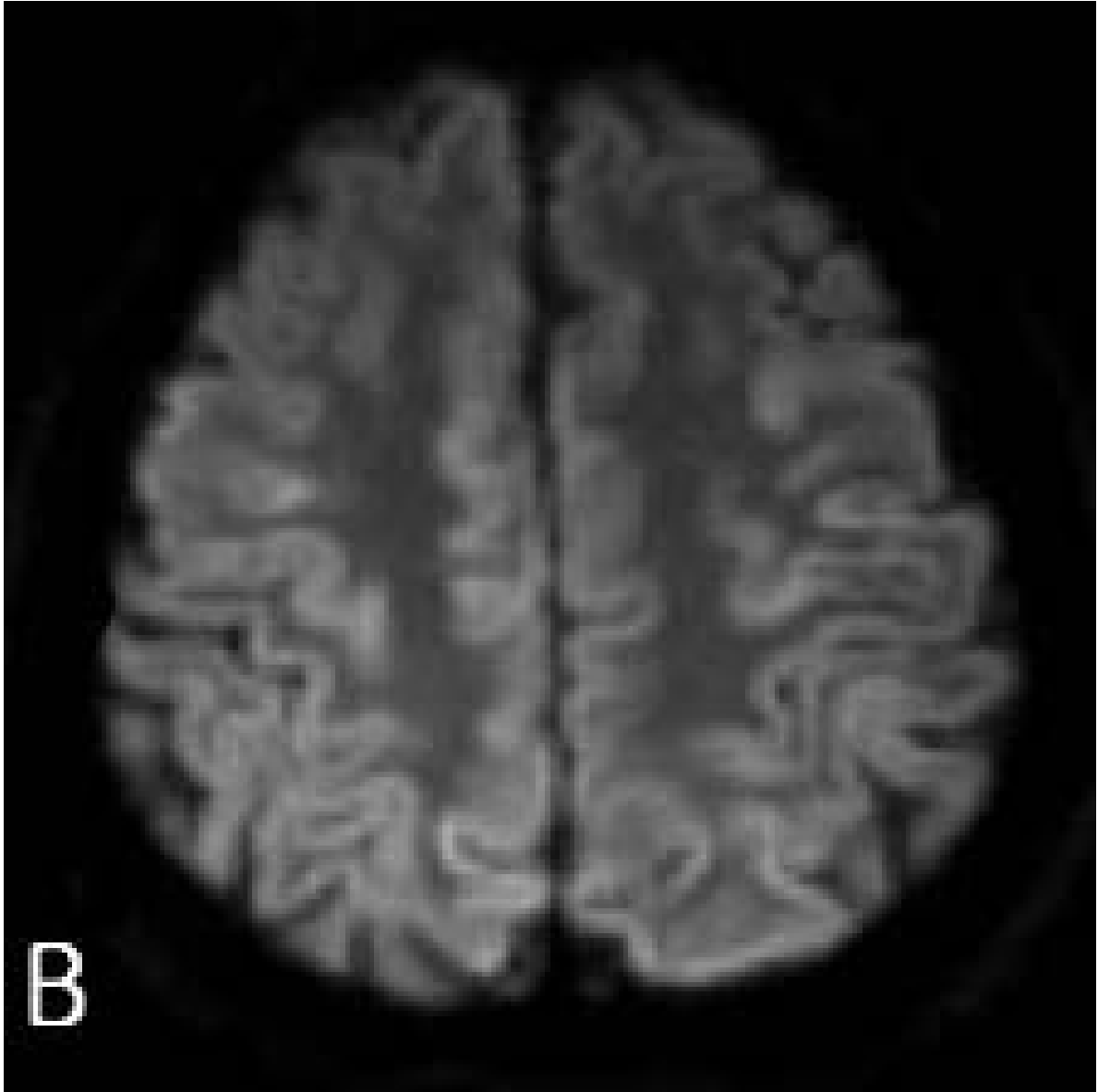
W56) Epidemiologic Description of Critically Ill Patients Treated in the Resuscitation Room in an Urban Emergency Department : In Suk Kim¹, **Sang Do Shin**¹, **Hee Kang Choi**¹, **Sun Hwa Shin**¹ : 1. Emergency Medicine, Seoul National University Hospital, Seoul, Korea, South.

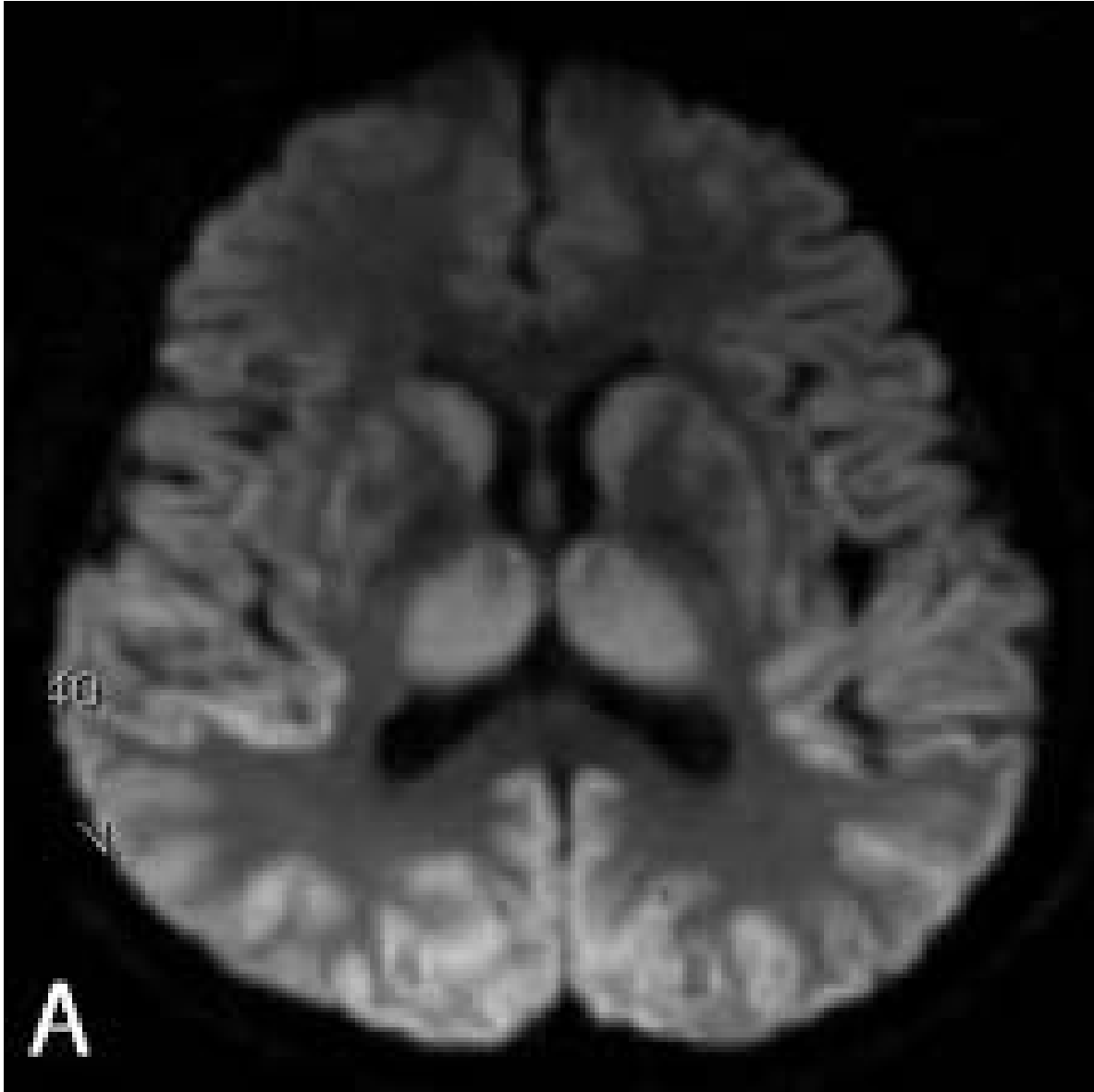
INTRODUCTION: The resuscitation room (RR) is used as a hub of intensive and focused activity for critically ill patients in the emergency department (ED). We describe the epidemiologic characteristics of critically ill patients treated in the RR. **METHODS:** This study was conducted from July 2007 to September 2008 in an urban adult (?15 years old) ED with over 40,000 annual visits, one RR, and 34 routine care beds. Baseline data was extracted from the National EE Information System, and main information was from RR registry which was prospectively recorded by Emergency Nursing Specialty. The RR registry included Emergency

Severity Index (ESI) levels, elapsed interval, causes of entry to RR, critical procedures, and outcomes. We compared patients treated in the RR (RR group) versus the other patients not treated in the RR (Non-RR group). RESULTS: The total number of patients was 41,209 including 1,050 RR group (2.99%). When comparing RR vs. non-RR group, baseline characteristics were as follows; male (62.21 vs. 52.03%), mean age (63.89 vs. 51.42 years), trauma (11.52 vs. 16.01%), public EMS (42.17 vs. 11.74%), discharge (15.25 vs. 69.25%), admission to ward (59.45 vs. 27.33), total hospital death (32.44 vs. 1.67%), ESI level 1 (57.88 vs. 1.56%), level 2 (30.92 vs. 17.17%), and level 3 to 5 (11.27 vs. 81.25%). Critical procedures in the RR group were as follows: cardiopulmonary resuscitation 10.03%, intubation 24.19%, ventilator 1.62%, cardioversion 5.73%, vasopressor 16.18%, central line 14.47%, antiarrhythmia drug 10.25%, transcutaneous pacing 2.51%, emergency thoracotomy 1.51%, intravenous thrombolysis 0.7%, and extracorporeal cardiopulmonary bypass 0.40%. Intervals to entry to RR were as follows: less than 0 min. 51.05%, 1 to 10 min. 27.43%, 11 to 60 min. 11.62%, and over than 60 min. 9.91%. CONCLUSION: The RR group experienced much higher mortality compared to the non-RR group. There were various critical interventions in the RR group for critically ill patients with high levels of ESI. About 80% of the RR group entered the RR within 10 min. after arrival to ED.

W57) Prognostic Value of Somatosensory Evoked Potential and Diffusion-Weighted Magnetic Resonance Imaging in Comatose Survivors after Cardiopulmonary Resuscitation : Se-min Choi¹, Kyu-Nam Park⁴, Seung-Pil Choi², Mi-Kyoung Kwon³ : 1. Uijeongbu St.Mary's Hospital, The catholic University of Korea, Uijeongbu City, Kyunggi-Do , Korea, South. 2. Seoul medical center, Seoul, Korea, South. 3. Seoul St.Mary's Hospital , Seoul, Korea, South. 4. St.Mary's Hospital , Seoul, Korea, South.

INTRODUCTION: This study was conducted to examine the prognostic values of Somatosensory Evoked Potential (SEP) and Diffusion-Weighted Magnetic Resonance Imaging (DWI) in predicting poor outcomes for comatose survivors. METHODS: We investigated 36 patients who were comatose after cardiac arrest. Among them, 30 had SEP, and 27 had DWI. Both tests were performed in 21 patients. To estimate the cerebral outcome, we used Cerebral Performance Category to classify the outcomes for our patients. RESULTS: In SEP, bilaterally absent N20 peak predicted poor outcomes with a specificity of 100% and a sensitivity 71.4%. In DWI, increased signal abnormality predicted poor outcomes with a specificity of 100% and a sensitivity 93.8%. In combination, both sensitivity & specificity are 100%. CONCLUSION: The combination of bilaterally absent N20 peak and abnormal DWI is better than either alone in predicting poor outcomes in patients who were comatose after cardiac arrest.





Magnetic resonance images at day 1 in a 68-year-old man who remained comatose following resuscitation from a cardiac arrest. Bilateral symmetric lesions are present in the basal ganglia, thalamus, occipital and parietal cortices. These lesions are bright on diffusion-weighted images (A, B),

W58) Completion Rate and Multiplier Effect in Video-Assisted CPR Training Among High Risk Cardiac Patients : Justin C. Hamaker¹, Joseph Heidenreich¹, Luke Matloff¹ : 1. Emergency Medicine, Scott and White Memorial Hospital, Temple, TX, USA.

INTRODUCTION: The objective was to measure completion rates of a self-directed cardiopulmonary resuscitation (CPR) training program among high risk cardiac patients and their friends and family. Timely bystander CPR is crucial for improving survival from cardiac arrest. This fact has led to increasing emphasis on improving layperson CPR education, especially among friends and family of high-risk patients, who are most likely to witness an actual arrest. The American Heart Association has recently begun promoting “CPR Anytime”, a video-assisted, self-directed CPR course that requires fewer resources and results in similar or improved CPR performance compared to standard CPR training. To date, there is no data on completion rates of such a course. Our study was designed to measure completion rates and the multiplier effect of a “CPR Anytime” kit distributed during a cardiac rehabilitation visit to high risk cardiac patients for use at home. **METHODS:** 42 consecutive cardiac rehab patients, deemed to be high risk due to recent admissions for either myocardial infarction and/or percutaneous coronary intervention, were recruited and each given a “CPR Friends and Family Anytime” kit. This kit includes an interactive DVD and practice manikin. Subjects were instructed to use the course to train themselves and as many of their friends and family members as possible. We called each patient after one month and three months to ask them a standardized set of questions about usage of the kit. **RESULTS:** Of the 42 subjects enrolled, overall compliance rate was 45% at 1 month and 62% at 3 months. The total number of friends and family that also participated in the training was 88, resulting in a total of 130 people trained from an original group of 42 subjects (multiplier effect of 3.10). **CONCLUSIONS:** “CPR Anytime” when used as a method for educating high risk cardiac patients results in high completion rates and a large multiplier effect. Further controlled studies are needed to compare this directly to standard CPR education.

W59) Early Plavix administration in acute coronary syndrome in the emergency department : Ali Shahrami¹, Mohamad Kalantari meibodi¹, Hossien Alimohammadi¹, Hamid Kariman¹, Hamidreza Hatamabadi¹, Mostsfa Alavimoghadam¹, Manije Kalantari meibodi¹, Ali Arhami¹ : 1. emergency, sbmu, Tehran, tehran, Iran.

INTRODUCTION: Considering the high rate of cardiovascular disease in Iran and a quick diagnosis and the prescription drugs and dosages in our country should be adopted to climatic and racial conditions prevalent. A study is needed to determine whether methods suggested are also suitable for our country. The practice under study here is an early administration of Plavix to patients with heart conditions in emergency wards. **METHODS:** We chose to study two Tehran super specialty hospitals that receive a great number of cardiovascular patients (Baghiatullah and Imam Hossein Hospitals). Early doses of Plavix were administered to patients with cardiovascular conditions. In 50 patients in Baghiatullah hospital the initial dose was chosen as 75 milligrams while in 50 patients in Imam Hossein Hospital it was decided to set the initial dose at 300 milligrams and it was decided to use the domestic product at both hospitals. Patients given the initial dose were given a constant daily dose equal to the initial dose during their stay in the hospital. The number of days of hospitalization and side effects were monitored until their discharge from the hospitals. **RESULTS:** Patients suffering from acute coronary condition that were taken to Baghiatullah hospital and given a dose of 75 milligrams, were hospitalized for 48 to 72 hours and then discharged while patients of a similar

condition who were not given the shot were usually hospitalized for 96 hours before being discharged. Patients with acute coronary conditions who reported to Imam Hossein hospital were given an initial dose of 300 milligrams. It was later demonstrated that this dosage had no significant effect on the duration of hospitalization, which for patients formerly hospitalized was around 48 hours. **CONCLUSION:** It could be concluded that in our country, administering an early low dose of Plavix (at emergency ward stage) is preferable to a later administration and it is also preferable to the administration of high doses.

W60) Implementation of a Protocol for Severe Hypoglycaemia in Pre-Hospital Emergency Medical Service of Latium (Italy) : De Luca Assunta¹, Silvia Scelsi¹, Antonio De Santis¹, Grazia Marcianesi Casadei¹, Luigia Pancucci¹, Francesco Cirella¹, Marinella D'Innocenzo¹ : 1. Regional Authority of Emergency services (ARES 118) , Rome (Latium), Italy.

INTRODUCTION: Pre-Hospital Emergency Medical Services in the Latium (central region of Italy; about 5.500.000 inhabitants) are regulated by the unique Regional Authority of Emergency services (ARES118). The 5 operative centres receive about 1.400.000 calls per year (30% A and B life threatening calls); 134 Territorial stations with 175 Ambulances (75% basic life support with nurse) and 3 helicopters manage the emergency interventions (85% BLS team). ARES118 uses the clinical governance approach to ensure high standards of care and continuously improve the quality of services. One of purposes is to produce and apply emergency clinical protocols (ECP), based on the best available evidence (research, literature or national or local guidance), to manage critical patients. **Aim:** to describe the implementation of the severe hypoglycaemia ECP for the BLS ambulances team. **METHODS:** In the end of 2008, ARES118 identified a panel of experts to produce the ECPs; the first ECP was for patients with severe hypoglycaemia. BLS ambulance teams were educated to use it applying the concepts and tools of experiential learning: 1) training coordinators/facilitators in a residential setting; and 2) on-site training in small groups of health professionals (6-8), led by a coordinator/facilitator. The course taught the teams how and when: to apply the protocol recommendation; to collect clinical and non clinical data, to perform clinical audits, to monitor performance and outcomes with main indicators. **RESULTS:** The ECP training involved about 800 emergency health professionals, between February and May of 2009. Participants positively evaluated both the educational programme and the clinical indications of the protocol. Evaluations of the impact of the pathways is underway, the results will be presented in the congress.

CONCLUSIONS: The application of the ECP method for patients with severe hypoglycaemia helped standardize behaviours in an environment characterized by great professional heterogeneity, as in the Latium. It also will improve patient treatment both in terms of response speed and use of appropriate therapies.

W61) C-spine imaging from ED : Sreejib Das¹, Mohammad Kokar² : 1. Emergency department, Ipswich Hospital UK, Ipswich, United Kingdom. 2. Queen Alexandra hospital, Portsmouth , United Kingdom.

INTRODUCTION: Each year in the U.K, moderate size emergency departments performs approximately 600-800 C-spine imaging. Of these, 97.6 percent are negative for fracture. The

Canadian C-spine rule was developed in 1999 in an attempt to reduce the number of X-rays ordered. Patients eligible for CCR evaluation should be alert and oriented and have stable vital signs. Aims: To determine if C-spine X-rays ordered from the ED were complying with CCR. Also determine if any clinically significant injuries were missed as well as study the epidemiological trend. METHODS: We performed a retrospective study of patients attending the ED between 17th of March 2008 to 16th of April and had a C-spine imaging performed. A total of 85 patients were identified within that period. However 40 patients were eliminated from the study as their notes could not be traced, or were unstable, or presented following surgery to the neck and did not meet the CCR criteria. Data obtained from the emergency notes included patient demography, presenting complaint, mechanism of injury and distracting or other injuries. The notes were also assessed if they documented midline tenderness and range of neck movements. RESULTS: A total of 45 patients were identified, 18 male and 27 female, average age was 36 years, with a range from 12 to 80 years. 26 patients attended following road traffic accident, 14 patients present following a fall, 3 following a fall, 1 following a fall. In 31 patients neck pain was the presenting symptom, the rest had back pain, head injury, shoulder pain, chest pain as their presenting symptom. 15 patients had dangerous mechanism of injury according to CCR guidelines, one patient did not sustain any injury and in one patient documentation was inadequate. 30 patients had midline tenderness, neck movement was recorded in 20 patients. CONCLUSION: Amongst low risk patients (n=28), 7 patients did not have midline tenderness, hence C-spine imaging could be avoided (15% reduction). Documentation of midline tenderness (17%) and active neck movements(55%) was poorly documented. We advocate pathways based on CCR be filled out prior to imaging of the C-spine.



R250

W62) Public awareness about the use of painkillers : Muhammad A. Majeed¹, Ashes Mukherjee¹ : 1. ED, nhs, Dudley, United Kingdom.

INTRODUCTION: Pain is one of the most common presenting complaints in ED. Its one of those areas in which a lot of work is being done at national levels. There are different scoring systems to rate and assess pain, and within a given time patients need to be given appropriate analgesia. We see many people in the ED with different types and areas of pain daily and we always ask them, have you taken any pain killers and the usual answer is “NO”. We never tried to determine the reason behind this “NO.” Do people really know they should have taken painkillers and have they ever been told about there use. We decided to perform this survey and find out how much the general population knows about the use of analgesics. **Objectives:** To assess the awareness about the use of analgesics among general population. **METHODS:** We administered a questionnaire to the people attending the ED with minor illnesses. We collected 100 sheets. **RESULTS:** See table. **CONCLUSION:** There are many types of pain killers available over the counter which can be safely used and any stronger version is usually given by the pharmacist who makes sure that there are no contraindications to the use. Looking at the above results 63% population had never been told about analgesics. Therefore this is one of the reasons which we can help people with by ensuring that we inform them while we see them, and putting up small posters on the waiting areas and in the individual cubicles. We can ask our GP colleagues and other health professionals to help the same way. There are many audits being conducted nationally to see what the pain score was when the patient attended the ED and did they receive analgesics accordingly. Unfortunately we haven’t come across any audit to see how much people know about the use of analgesics in general or how can we update them. We need to recognise this area of deficiency.

results

	yes	no	percentage
Do you know you should take pain killers for any pain?	65	35	65%
Do you know it will not change the diagnosis?	43	67	43%
Do you know it will help in the diagnosis?	34	66	34%
Do you know any form of pain killers?	89	11	89%
Have you ever been told these things before?	37	63	37%

W63) What determines the number of patients applying to emergency service? Is there a constant for every emergency service in hospitals? : Mehmet Dokur¹, Mustafa Sever², Feridun Celikmen³ : 1. Kilis State Hospital, Kilis, Turkey. 2. Ege University Medical Faculty, Izmir, Turkey. 3. Yedi Tepe University Medical Faculty, Istanbul, Turkey.

We realised that the number of patients applying to emergency department develops an approximate value between an interval, however, we noticed an incremental increase over the years. In some certain terms we noticed that the number of patients both increased and close to each other. We also realised that emergency service is a beaten track for some patients. Factors affecting the number of cases applying to emergency service may be local socio-cultural

situation, local climate-geographic situation, sufficiency of polyclinics in coordination with the hospitals, global warming and other undefined issues affecting illness rates. We know that the more hospital polyclinics perform well, the less the emergency services are attended. The tendency of patients to present to emergency services may also be a factor. Considering those issues, it may be important to make an affiliation. An emergency case appliance factor may be determined which shows the emergency workload of hospitals.

W64) What should be the surgical concept of emergency medicine? To what extend surgical emergency medicine? : Mehmet Dokur¹, Mustafa Sever² : 1. Kilis State Hospital, Kilis, Turkey. 2. Ege University Medical Faculty, Izmir, Turkey.

Emergency medicine, has undergone a considerable improvement since its beginning, however, not enough acceptance is given in some provinces. Our clinical observations show that considering doctors from different professions, there is a crucial connection between correspondingly recognising and completing each other on diagnosis and treatment. Especially surgeons' point of view may be very sharp and excluding considering the difference in notion and province they come. With an optimistic point of view, some surgeons tend to perceive emergency doctors as quality practitioners. Other diverse points of view can be scored from 0 to 100 between these two points of view. It is easier for emergency medicine physicians to apply the areas of internal medicine to emergency medicine compared to emergency surgical applications which require more practice thus can be applied later. The acceptance of those applications may be increased provided that they are practised under observation of a surgeon for a while. Emergency medicine should more actively determine the perception of surgeons to emergency medicine physicians. Emergency medicine physicians should include the minor surgical operations (Cystofix etc.) and non-operative surgical applications (emergency endoscopic and bronchoscopic applications etc.) into their clinical applications. Our clinical observations demonstrates the importance of working in a integral and harmonious concept with surgeons for the improvement of emergency medicine.

W65) Drowning : Ulf Martin Schilling¹ : 1. Accidents and emergencies, Linköpings university hospital, Linköping, Sweden.

Approximately 500.000 deaths due to drowning are reported annually, 30.000 of these in Europe. Due to the relatively rare occurrence of drowning victims at each single emergency department, most emergency physicians cannot get routine in dealing with drowning victims. Whilst confounding about the classification and pathophysiology of drowning could be reduced following the Utstein-consensus, the application of therapeutic modalities and, most important, the estimation of the probable prognostic outcome remain difficult for the emergency physician.

In this 15 minutes lecture, an overview about the classification, pathophysiology, the therapy at the emergency department and the prognostic outcome in drowning accidents is given.

W66) A Survey of Emergency Physicians' Clinical Practice Patterns in the Assessment and Treatment of Mild Traumatic Brain Injury (MTBI) in US Emergency Departments : Suzanne Bentley¹, John Bruns¹, Andy Jagoda¹ : 1. Emergency Medicine , The Mount Sinai School of Medicine, New York, NY, USA.

INTRODUCTION: Emergency Department (ED) management of MTBI in the US remains controversial and limited literature exists regarding emergency physician (EPs) clinical practice patterns. **STUDY OBJECTIVES:** Compare self-reported ED practice to the American College of Emergency Physicians' (ACEP) MTBI clinical policies (CPs) published in 2002 and updated in 2008. **METHODS:** Cross-sectional, convenience sample of EPs at 2008 ACEP Scientific Assembly via 25-item survey on evaluation, neuroimaging and disposition of MTBI patients, knowledge of the 2002/2008 ACEP MTBI CPs, post-concussive syndrome (PCS), and MTBI patient education and discharge instructions (DCI). **RESULTS:** 1003 EPs completed surveys. 25% were aware of the 2008 ACEP CP update, 50% were aware of the 2002 version. 31% reported a change in clinical practice with non-compliance to the MTBI CPs from 50% in 2002 to 25% in 2008. In 2002, 86% thought it was important to identify any intracranial lesion versus 73.4% in 2008. New topics in the 2008 MTBI CP: 75% recognized all clinically important indicators when deciding to get CT scan. 12.6% reported that biomarkers have a clinical role in MTBI; 25% reported that MRI is better than CT despite lack of published evidence or CP recommendations. PCS: 95% were able to recognize symptoms; 89% provide specific PCS patient information; 60.2% provide specialist referral for follow-up. The high percentage of respondents with knowledge of PCS symptoms was inconsistent with the self-reported percentage of patient education and specialist referrals. **CONCLUSIONS:** While some improvement in awareness and self-reported compliance with ACEP MTBI CPs was demonstrated between 2008 and 2002 survey responses, the majority of current ACEP survey participants remain unaware of these CP. Increased awareness could impact discharge planning and facilitate a more selective approach to neuroimaging. Furthermore, improvements in provider provision of MTBI patient education and DCI should be investigated in order to improve patient outcomes.

W67) Medication Dispenser Alert Improves Compliance with Obtaining Blood Cultures Prior to Antibiotics Administration for Patients Admitted with Pneumonia : Rishi Sikka¹, Rolla Sweis¹, Carleen Kaucky¹, Erik Kulstad¹ : 1. Advocate Christ Medical Center, Chicago, IL, USA.

INTRODUCTION: The study objective was to measure the impact of an automated dispensing cabinet (ADC) alert on improving compliance with obtaining blood cultures prior to antibiotics for patients admitted from the emergency department (ED) with pneumonia. **METHODS:** This is a before and after study of adult ED patients with an admitting diagnosis of pneumonia from October 2007 to September 2008. The intervention consisted of a series of questions in the ED medication ADC regarding the need for blood cultures and antibiotic administration. We compared the proportion of patients in whom blood cultures were obtained prior to antibiotic administration before the intervention (October 2007 – March 2008) to the proportion after the intervention (April 2008 – September 2008). **RESULTS:** A total of 951 patients with pneumonia were identified during the study period; 426 before, and 525 after, intervention. Compliance with blood cultures before antibiotics was 84% (205/245) before, and 95%

(275/291) after the intervention, respectively ($p < 0.001$), representing an increased odds of compliance with obtaining blood cultures before antibiotics (OR 3.4, 95% CI 1.8-6.2).

CONCLUSIONS: In this population, a series of questions in an ADC improved compliance of obtaining blood cultures prior to antibiotic administration in adult ED patients with pneumonia.

W68) After Hours Non-Contrast Computed Tomography Interpretation by Emergency Department Junior Doctors in Suspected Renal Colic: a Retrospective Evaluation : Brian J. Burns¹, Martin Duffy², John Raftos¹ : 1. Sutherland Hospital, Sydney, NSW, Australia. 2. St.Vincent's Hospital, Sydney, NSW, Australia.

INTRODUCTION: Our objective was to determine the reliability of Emergency residents and registrars' interpretation of non-contrast CT (NCCT) in investigation of renal colic, independent of radiology input. **METHODS:** We reviewed the medical files of 89 consecutive adult patients who underwent after-hours NCCT for suspected nephrolithiasis. All patients had presented to the Emergency Department(ED) of an urban district hospital in the 6 month period from 19/8/06 to 19/2/07 with suspected renal colic. An existing protocol allowed Emergency residents and registrars to order NCCT without radiology approval. After-hours was defined as all patients imaged between 1800 and 0800, 7 days a week. All scans were interpreted by ED junior doctors, varying in grade from resident to registrar. No formal radiology input/opinion was gained on any patients prior to disposition. All charts were reviewed for clinical correlation with formal radiological findings. **RESULTS:** Overall, (51/89) 58% of patients had evidence of a renal calculus on NCCT causing renal colic. ED doctors, ranging from resident to registrar interpreted the scans. There was an overall sensitivity of 82%, specificity of 92%, positive predictive value (PPV) of 93% and negative predictive value (NPV) of 80%. When adjusted for ED registrar interpretation only, sensitivity increased to 92%, specificity to 96%. This was associated with a PPV of 96% and NPV of 99%. **CONCLUSION:** This study shows that NCCT, ordered and interpreted by Emergency Department junior doctors is reliable. This comes with the caveat that all scans should be reviewed by an emergency registrar or consultant prior to disposition.

W69) The Road to Clinical Excellence – Heart Failure Clinical Algorithm: Promoting Evidence Based Practice : Darlene Bradley¹, Tania Bridgeman¹ : 1. University of California Irvine, Orange, CA, USA.

This Nursing session focuses in on a powerful strategy to manage heart failure in the Emergency Department (ED). Evidence-based clinical algorithms allow for: early diagnosis of the patient's condition; judicious use of resources; standardization of prescribing practices; expedient treatment modalities; decreased turnaround time; lower cost per discharge, improvement in patient satisfaction and, the promotion of collaborative practice between physicians and nurses. According to the American Heart Association (2008), heart failure has been recognized as a serious public health problem with 550,000 newly diagnosed cases annually; accounting for 11 million physician clinic visits, and ED readmissions. Currently acute decompensated heart failure is followed closely by the regulatory bodies for adherence to quality measures. There exists a desire for hospitals to improve clinical outcomes. The heart failure ED algorithm was developed in collaboration with the internal expert nursing and

physician practitioners to evaluate evidence based practice, incorporating the American College of Cardiology and the American Heart Association guidelines for the diagnosis and management of the heart failure patient.

Clinical discharge: time in the ED; BNP; diuretic administered; chest X-ray; left ventricular ejection fraction; Beta blocker and ACE/ARB for LVEF < 40% prescribed at time of discharge and smoking cessation counseling. This session allows the ED nurse to explore the care of heart failure patient populations and administrative data can be tracked through the algorithm from the ED arrival through inpatient and gain a greater understanding of treatment alternatives. Sharing this model promotes evidence-based medicine and accords other institutions a best practice in the care of these patients and provides an opportunity for further research.

W70) Risks to Remember when Admitting Patients with Low risk Acute Coronary Syndrome in Clinical Decision Units : Muhammad A. Majeed¹, Kiran Bhatt¹, Ashes Mukherjee¹ : 1. ED, nhs, Dudley, United Kingdom.

INTRODUCTION: Chest pain is one of the most common presenting symptom in the ED. We stratify chest patients as high or low risk depending upon their presentation and risk factors. Many hospitals nowadays manage the low risk patients in their Clinical Decision Unit (CDU) and perform serial cardiac enzymes and ETT. Sometimes we noted that even high risk patients were kept in CDU, which is not safe, as we don't perform any cardiac monitoring there.

Therefore we should be careful about keeping high risk chest pain cases in the CDU.

Objectives: To see if we correctly follow the guidelines to score patients' risk of Acute Coronary Syndrome (ACS), investigate cases appropriately, monitor the patients according to the guidelines, get the patients properly discharged, and include appropriate documentation.

METHODS: We collected data on 50 patients with low risk chest pain from CDU and analysed their notes.

RESULTS: in table. **CONCLUSION:** Ischemic heart disease is one of the leading causes of death all over the world. Therefore to make the decision that this patient just needs a bed and no monitoring has to be made very carefully. Findings that many patients in CDU have high risk chest pain is not safe for the patients as they might develop some more and severe ischemia, at a time when they are not being monitored. Even if we assess the patients as low risk ACS they still need serial ECG every 4-6 hrs. Most of the patients had no documentation for cholesterol levels in their notes which in many cases will make them a high risk patient. We didn't find any documentation what medications, such as aspirin, statins the patients had to take after discharge from CDU but still awaiting ETT. We think we should use CDU as a place where patients do not need any significant monitoring or care.

results

high risk patients admitted to CDU	44%
patients with documented cholesterol levels	none
patients with no documented family history	55%
4-6 hrly ECG	none
patients with high cholesterol	77%

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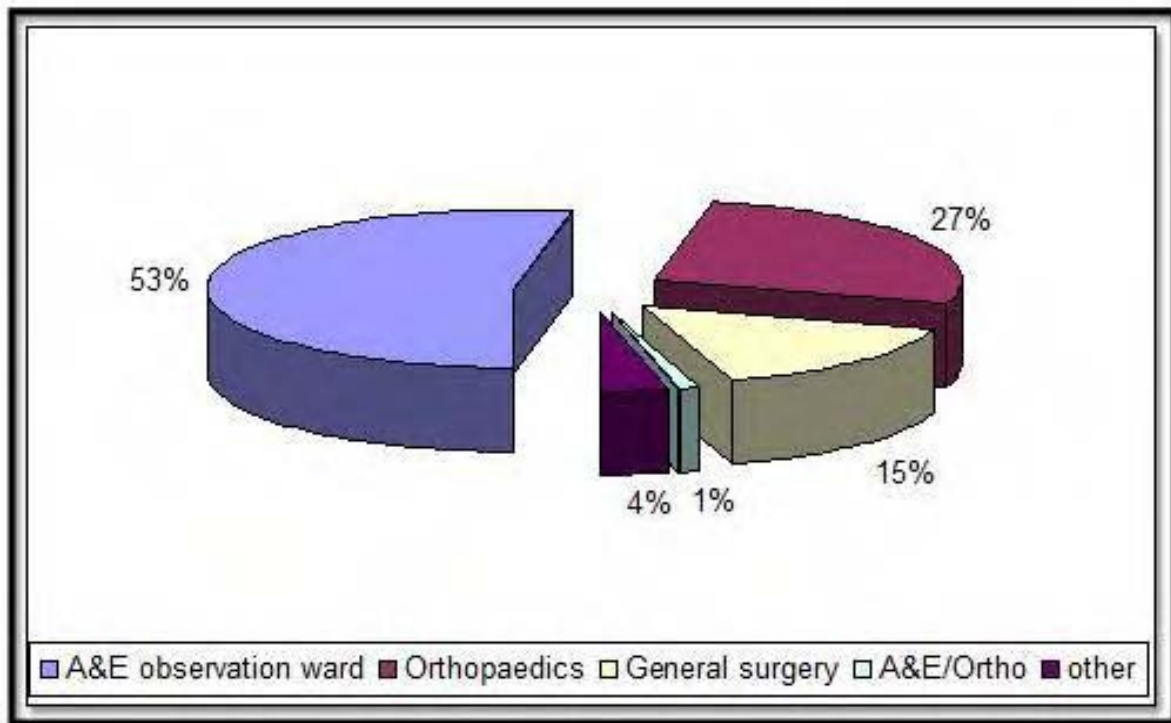
W71) Evaluation of CURB-65 for Community Acquired Pneumonia (CAP) Patients Admitted Through the Emergency Department (ED) : Ronald Benenson¹, Michelle Law¹, Jeff Pinnow¹ : 1. York Hospital, York, PA, USA.

INTRODUCTION: The 2007 ATS/IDSA community-acquired pneumonia guidelines recommend the use of CURB-65 in the emergency department to identify patients appropriate for outpatient treatment. CURB-65 criteria include: new onset confusion, BUN > 20 mg/dL, respiratory rate ? 30, systolic blood pressure < 90 or diastolic blood pressure ? 60, and age ? 65. The purpose of this study is to compare hospitalized CAP patients by CURB-65 score to determine if a low score predicts an uncomplicated hospital course. **METHODS:** This is an IRB-approved, retrospective chart review of consecutive CAP patients, age ? 18, admitted to a community teaching hospital from the ED during 2007. Patients with risk factors for healthcare-associated pneumonia, immunosuppressive disease and/or therapy, and non-pneumonia discharge diagnosis were excluded. CAP patients with CURB-65 scores of 0-1 were compared to patients with higher scores. Data elements included CURB-65 components, prior antibiotic treatment, radiologic, lab and culture results, co-morbidities, markers of hospital morbidity (ICU stay, intubation, non-invasive ventilation), and mortality. Statistical analysis was done by Mann-Whitney U and Fisher's exact test. **RESULTS:** Of 354 CAP patients, 199 were CURB-65 score 0-1 (low-risk). The low-risk group had a shorter median length of stay (3.00 days, IQR 2 vs. 4.00 days, IQR 5; p < .001), fewer median number of other reasons for admission (2.0, IQR 1 vs. 3.0, IQR 2; p < 0.001), lower mortality (0.0% vs. 3.9%, p = 0.007), and fewer markers of hospital morbidity (9.0% vs. 12.3%, p = 0.382). None of the CAP patients had blood cultures positive for MRSA. Low-risk patients with sputums positive for multi-drug resistant organisms had expected co-morbidities. **CONCLUSIONS:** The use of CURB-65 criteria for CAP patients identifies a group of patients with a less complicated hospital course demonstrated by decreased length of stay, fewer number of reasons for admission, and lower mortality. CURB-65 criteria could be used to identify patients that are safe for outpatient management with screening of other reasons for admission.

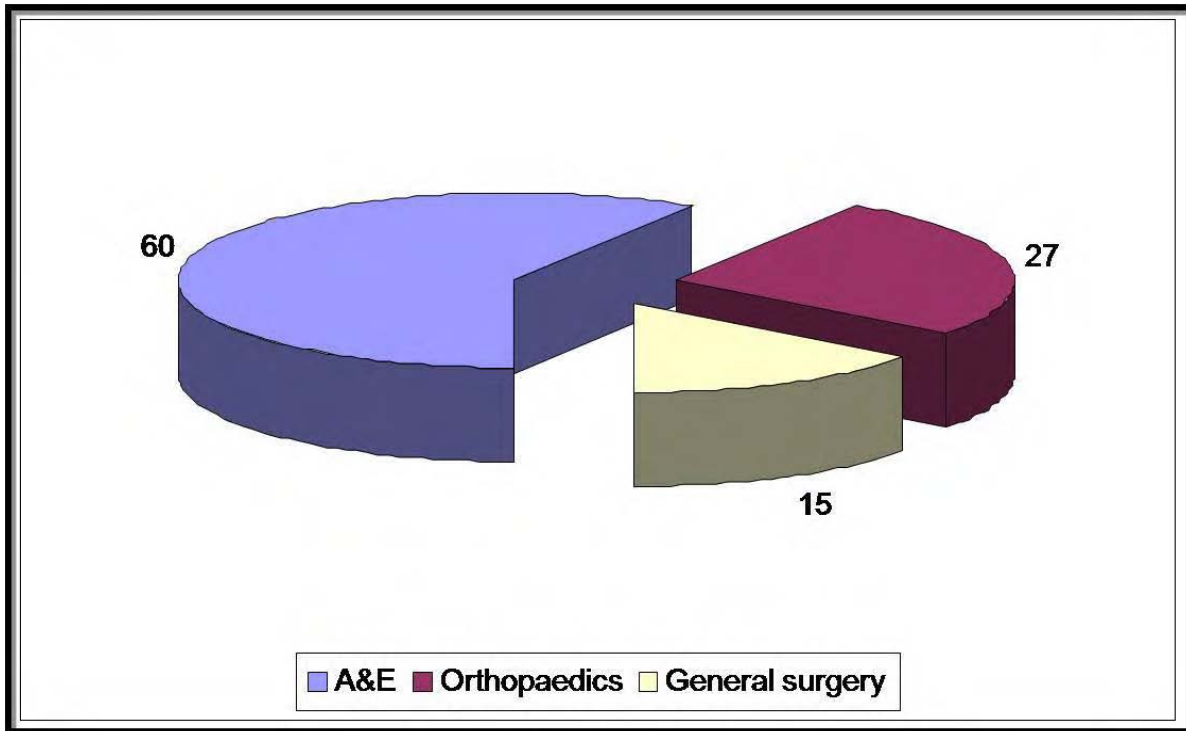
W72) Who Cares for the Head Injured Patient in 2008? The U.K. National Head Injury Survey 2007-08. : Farooq Pasha¹, David Robinson¹, Peter Bradley¹ : 1. Accident and Emergency, Bradford Royal Infirmary, Bradford, WestYorkshire, United Kingdom.

INTRODUCTION: The aims of this study were to determine current practice in the U.K. in the observation of patients with minor head injury requiring admission to hospital. **METHODS:** **TYPE OF STUDY:** Electronic survey. A brief questionnaire was sent electronically to all members of the College of Emergency Medicine in November 2007 and again in January 2008. Questions focused on implementation of NICE head injury guidance (2003 and 2007), specialty responsibility for observing adult and paediatric patients with minor head injury, and location of patient placement for observation. **RESULTS:** Complete replies were received from 87 Emergency Departments (EDs) in England, Wales and Northern Ireland (replies from Scottish EDs excluded as SIGN guidance used rather than NICE guidance in Scotland). NICE

head injury guidance (2003) has been implemented in 42/87 (48%) EDs. 10/45 (22%) EDs that have not implemented the 2003 NICE guidance definitely intend to introduce the 2007 NICE guidance. Emergency Physicians are responsible for the initial in-patient observation of patients with minor head injury in 49/85 (58%) of departments seeing adult patients. 45 (92%) of these departments use an ED observation unit to observe adult patients. The majority of children with minor head injury admitted for observation are solely under the care of a paediatrician or paediatric surgeon (57/84, 68%), with 80/84 (95%) admitted to a paediatric ward. Of departments that implemented the 2003 NICE head injury guidance, 29/42 (69%) observed patients in an ED observation unit. CONCLUSIONS: Emergency Physicians in the UK are increasingly responsible for the in-patient observation of adult patients with minor head injury. The majority of adult patients are observed in a dedicated ED observation unit. Implementation of NICE head injury guidance may be a driver for increased involvement of Emergency Physicians in the observation of patients with minor head injury.



Location of observation beds for adult patients



Involvement in initial inpatient observation of adult patients with minor head injury (%)

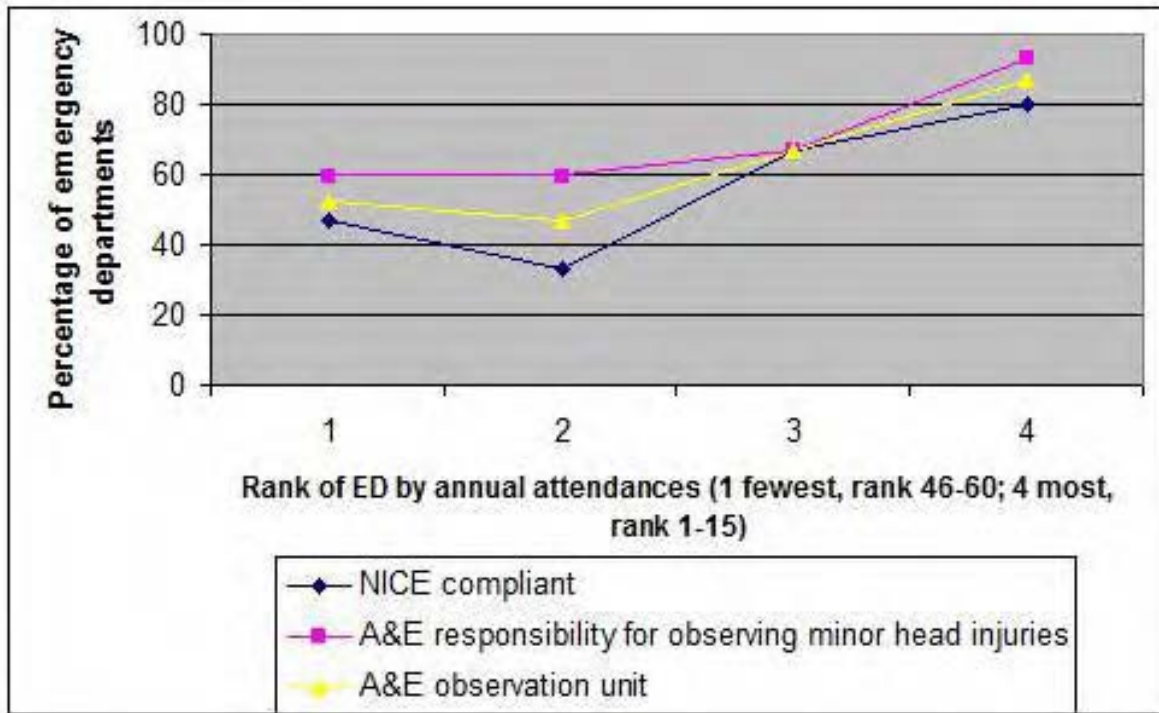
W73) Size Does Matter – Variations in Adult Head Injury Management in England : Farooq Pasha¹, David Robinson¹, Peter Bradley¹ : 1. Accident and Emergency, Bradford Royal Infirmary, Bradford, WestYorkshire, United Kingdom.

INTRODUCTION: We sought to identify trends in the management of adults with minor head injury requiring hospital observation presenting to Emergency Departments (EDs) in England. **METHODS:** A brief questionnaire was sent electronically to all members of the College of Emergency Medicine in November 2007 and again in January 2008. Questions focused on implementation of NICE head injury guidance (2003 and 2007), specialty responsibility for observing adult patients with minor head injury, and location of patient placement for observation. Data on annual attendances during 2007-2008 were retrieved for each replying ED/NHS Trust in England. Statistical analysis was performed to identify trends in head injury management by size of department (Pearson’s correlation coefficient and calculation of odds ratios). **RESULTS:** Complete replies were received from 60 EDs and NHS Trusts in England. There was significant correlation between size of ED and implementation of NICE head injury guidance ($r=0.887$), involvement of emergency physicians in initial inpatient observation ($r=0.956$), and use of an A&E observation unit to observe patients ($r=0.959$). When the largest 30 departments were compared to the smallest 30, a significantly greater proportion of larger departments were found to have introduced NICE head injury guidance [73% versus 40%, OR

4.13 (95% CI 1.39-12.27)], to have emergency physician involvement in inpatient observation [80% versus 60%, OR 2.67 (0.84-8.46)] and use of an A&E observation unit [77% versus 50%, OR 3.29 (1.09-9.95)]. CONCLUSIONS: There is significant variation in head injury management in EDs in England. Larger departments are more likely to have implemented NICE head injury guidelines, and are more likely to observe patients with minor head injury requiring admission in a dedicated ED observation unit under the care of an emergency physician.

DATA FROM SURVEY OF UK HOSPITALS

RANK OF EDs BY SIZE	MEDIAN ANNUAL ATTENDANCES	NICE COMPLIANT(%)	EMERGENCY PHYSICIAN INVOLVEMENT(%)	ED OBSERVATION UNIT(%)
40-60	66,000	47	60	53
31-45	78,000	33	60	47
16-30	103,000	67	67	67
1-15	140,000	80	93	87
ALL EDs		57%	70%	63%



W74) A comparison of the results of color duplex ultrasonography with signs and symptoms of DVT : Hamid R. Javadzade¹, Ali Arhami dolatabadi¹, Nsir Nasiri sheikhani¹, Sadrollah Mahmoudi¹, Zabihallah Taleshi¹, Mossayeb Zanjani¹, Mohammad Kalantari meybodi¹ : 1. emergency medicine, baghyatallah , Tehran, tehran, Iran.

INTRODUCTION: The study objective was to compare the results of clinical signs and symptoms with color duplex ultrasonography in all patients with signs and symptoms of DVT to see if they are related to the degree of obstruction to venous outflow and inflammation of the vessel wall. **METHODS:** Death from DVT is attributed to massive pulmonary embolism, which causes 200,000 deaths annually in the United States. In all of the patients with signs and symptoms of DVT we compare the results of clinical sign and symptom with color duplex ultrasonography. **RESULTS:** There were 144 cases at the ED of Imam Hossein Hospital, principally unilateral, is the most specific symptom and leg pain. Maximum of age was 86 years and minimum was 16 years with mean at 28.6 years and S.D was 18.4. Immobilization was the most common cause of DVT (64%). All of the patients (100%) had color duplex ultrasonography, with 60% of 144 patient having DVT and 40% with alternate diagnosis and no DVT. The 40% without DVT, had cellulitis (8%), varicose veins (4%), arterial insufficiency (0.5%), asymmetric peripheral edema secondary to CHF, liver disease, renal failure, nephrotic syndrome (4%), superficial thrombophlebitis (6%), muscle or soft tissue injury (6%), rhabdomyolysis (5.5%), and others (air and car travel leg in down position) (6%).

W75) Prevalence of addiction in patients in the emergency department : Ali Arhamidolatabadi¹, Mohamad Kalantari meibodi¹ : 1. EMERGENCY, SBMU, Tehran, TEHRAN, Iran.

INTRODUCTION: Drivers of motorcycles and inter-civil means comprise the majority of traumatic emergency presentations to hospitals. It is important to consider conditions of narcotics abuse may be more likely in serious accidents due to decreased reflex response of the body and awareness status. In this study we reviewed over 100 patients injured and hospitalized in Imam Hossein Hospital, who presented to the emergency department because of bone fracture or severe lacerations of the skin or dislocation of organs. **METHODS:** In this research, we enrolled 100 patients; drivers and motorists who presented because of traumatic emergency to Imam Hossein Hospital. Patients were hospitalized because of bone fracture or vast laceration of skin or dislocation of organs, without regard to sex, age and vehicle type. After first stabilizing vital signs, we obtained a history of using narcotics by the patient or his/her companions, and we obtained urinary samples to be analyzed in the lab. It is mentioned that these actions were accomplished with consent of the patient and his/her companions and we convinced them that it is important for the practitioner to determine the type and rate of prescribed tranquilizers. In this time we considered 109 patients nondrivers, motorists with non-traumatic problem (for example infectious disease, surgery, chest pain,) who went to the medical emergency of Imam Hossien Hospital. **RESULTS:** Final findings indicate that among these 100 patients: In 19 women, none of them had any narcotics abuse, neither from their history nor from their lab kits, but from 81 men, only 35 or 43% were healthy from history and lab kit consideration while 39 (48%) of them, have narcotics abuse from history or laboratory consideration. **CONCLUSION:** It is necessary for practitioners working with trauma care in the

emergency departments of hospitals to prescribe tranquilizers in higher dosages and it is necessary to do cultural acts for reducing narcotics abuse.

W76) Can ED software help in regulation from the disaster site? : Luc J. Mortelmans¹, Pieter Van Turnhout¹, Peter Van Hellemond¹ : 1. Emergency Medicine, AZ KLINA, Brasschaat, Belgium.

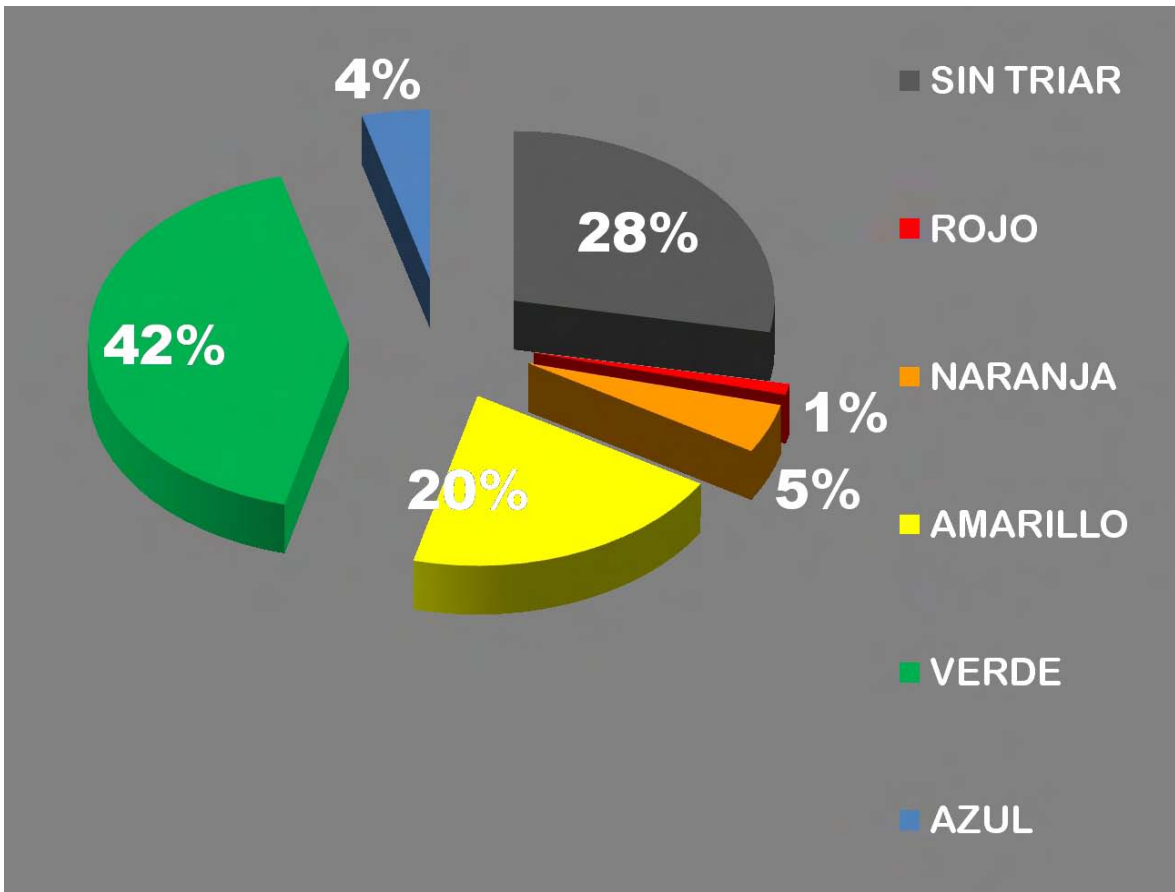
BACKGROUND: Regulation from the disaster scene to receiving hospitals is based on specific pathology and an “honest distribution” of the victims. Wireless technology, instant internet access and PDA’s can offer ICT support on the disaster site, not only for registration purposes. In the province of Antwerp, Belgium, we use a password protected, web based online registration and specification of available hospital beds in the draining hospitals. However this system does not provide any information on the workload of the respective emergency departments (ED). A hospital with available ICU beds can have an overwhelmed ED with multiple code red patients. If these ED’s could offer online web based information on their actual situation it would be helpful. If this information can be provided without any administrative burden for the ED itself one can guarantee up to date information.

DISCUSSION: E-care ED offers the feature of ad hoc reporting. Using a standard reporting tool, data can be provided to remote, licensed web page users without they have to use the software application itself. Interpretation and statistical evaluation of these data can offer a view on occupation, waiting - and transit times, point of saturation of the respective ED’s. As this currently updated information is readily available on a website it could be very helpful dividing the patients from the disaster site to the most appropriate hospital. **Conclusion:** Any software program that offers remote, updated ad hoc information on the current situation of the respective ED’s can be helpful in regulating patients from the disaster site, especially if no extra efforts or administration in the ED is needed.

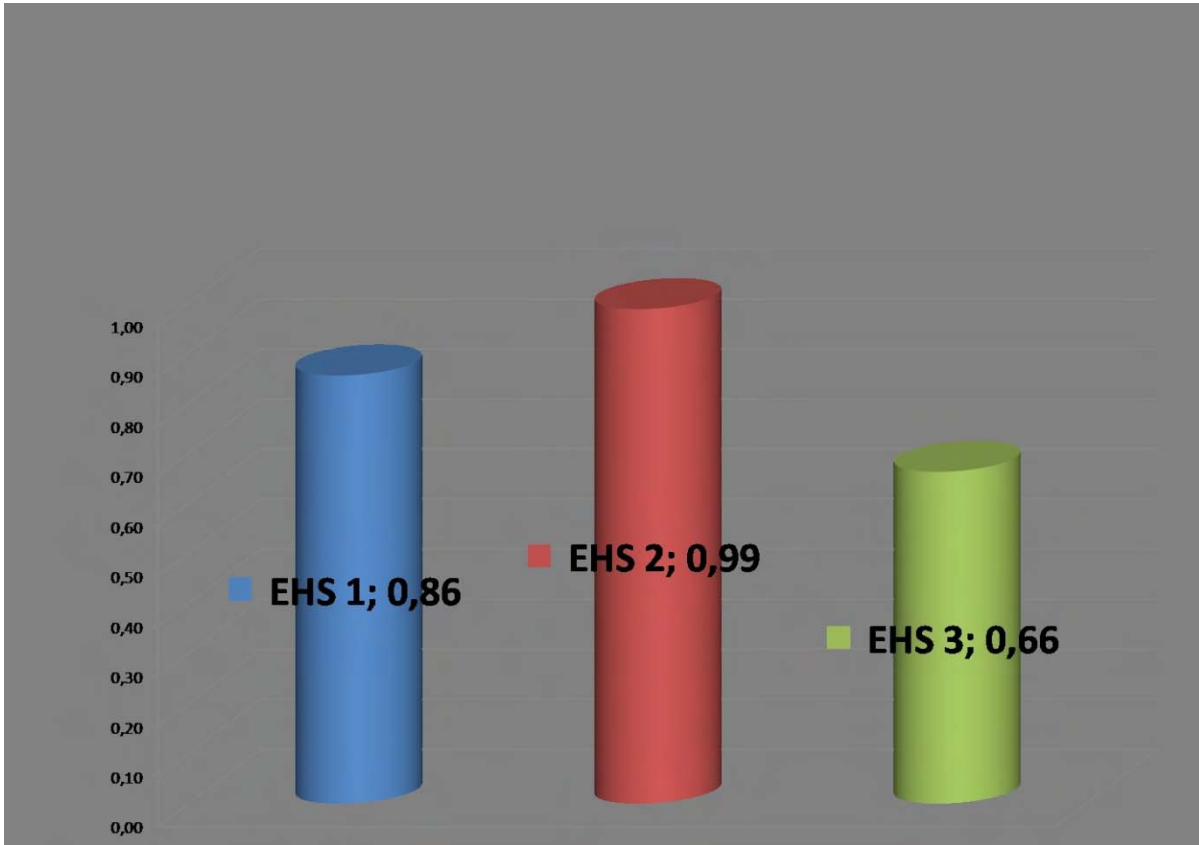
W77) A SITUATIONAL STUDY OF EMERGENCY HOSPITAL SERVICES IN THE VALENCIAN COMMUNITY : Rosa N. Villanueva¹, Joan Brau², Javier Millán³, Francisco Ortiz¹ : 1. Generalitat Valenciana. Hospital Gandia, Valencia, Valencia, Spain. 2. Generalitat Valenciana. Hospital de Vinaros, Vinaros Valencia, Spain. 3. Generalitat Valenciana. Hospital de Xativa, Xativa Valencia, Spain.

INTRODUCTION: The growing demand in the Emergency Hospital Services (EHS) in the Valencian Community (VC) has necessitated substantial changes in their internal organisation and to establish priorities according to severity and establishing indicators that quantify the delays. The ministry of health of VC has implemented (beginning into 2006) an improvement plan (ATLAS PROJECT) with two programs: a system of classification (ALERT PROGRAM) based on the Manchester system and a digital discharge report from emergency (HOSPITAL DISCHARGE APPLICATION). **OBJECTIVES:**1) Analysis of data obtained through both programs; 2) Problems of use in the emergency services: Inherent difficulty in inputting data on critical patients; 3) Consequences of data collection problems: input delays; 4) Definition of different indicators; Proposals for improvement. **METHODS:** One year descriptive study of several hospitals. **Period:** 2007. **Sample:** All registrations in 3 hospitals in the VC, analyzed by trimestre. **Data collection:** Management tools from both programs, discharge report and triage

system (connection with ALERT PROGRAM). RESULTS: Frequency by severity: 1% critical (similar in all). Admission rate: 2% variability. Transfer rate: equal in similar centres. EHS 2 more outlying rise in rate. Return in 72h: higher in EHS 2, influenced by reconsultation by appointment. Average annual mortality: 1%. Average delay in primary attention: basic indicator, scarce reliability currently, report isn't being opened during primary attention. Influence of summer period: EHS 2, 3rd trimester had larger delay in attention; in EHS 1, also a coastal centre, the difference can't be appreciated due to technical problems. CONCLUSION: Proposal for improvement: Reliable data: Frequency of visits by severity; number of admissions; rate of return and annual mortality. Unreliable data: Average delay in primary attention; Average delay according to severity (basic indicator). Proposal for improvement: Contribution of technical resources, human resources, adequate hardware, enough boxes, motivation of staff.



% SEVERITY



AVERAGE ANNUAL MORTALITY %

W78) Developing safe support systems for paediatric emergencies – The 'Paeds ED' Project : Haidar Samiei¹, Bradley Wilson², Tajek B. Hassan³ : 1. Doncaster Royal Infirmary, Doncaster, United Kingdom. 2. Bradford Royal Infirmary, Bradford, United Kingdom. 3. Dept of Emergency Medicine, Leeds Teaching Hospitals NHS Trust, Leeds, United Kingdom.

INTRODUCTION: Electronic clinical decision support systems (CDSSs) in the ED setting continue to evolve to support clinicians and enhance patient safety. Systems range from rapid clinical retrieval technologies to CDSSs that are tailored to individual patient and system needs. A key area of anxiety for clinicians is recognised as being paediatric resuscitation. In particular, the calculations required for equipment size, fluids and drug dosages can prove to be especially challenging, time consuming and lead to error. **OBJECTIVE:** To describe the development of a novel application (Paeds ED) designed to support clinicians making real time calculations in a paediatric resuscitation situations for critically ill and injured children. **METHODS:** The iPhone platform was chosen to develop an application that would meet the needs of EM physicians managing certain categories of ill and injured children in an acute resuscitation setting. Key time dependent emergency conditions were identified. An iterative

development cycle was used, structured to address accuracy, reliability, interactivity and rapidity of accessing key information. RESULTS: Coding was structured to develop an expert system in key domains. The Paeds ED decision aid contains an age to weight converter and a drug formulary list. The age to weight conversions are based on the World Health Organisations 50th percentile tables. Once the user enters the age or weight the application is able to construct a formulary list for that patient in key clinical conditions. The drug formulary is consistent with UK and US national formularies. The formulary can be accessed directly or by a modular interface which is situation specific using standard internationally recognised resuscitation algorithms for key calculations (eg: WETFAGS, Fluids, Pain, Anaphylaxis, epilepsy, sedation, anaesthesia, asthma, meningitis and inotropic support). CONCLUSIONS: Through a number of iterative steps we have developed a CDSS application designed for use by EM clinicians in the management of critically ill and injured children. Further beta testing and validation of the product is in progress.

W79) Development of a Computational Method to Automatically Acquire ED Crowding Data : Antone Eason¹, Vytautas Vaicys¹, Erik Kulstad¹ : 1. Emergency Department, Advocate Christ Medical Center, Chicago, IL, USA.

INTRODUCTION: The problem of emergency department (ED) crowding continues to increase worldwide. Various metrics have been proposed for the quantification of crowding; however, the acquisition of data required for these metrics, such as the total number of patients in the ED, typically requires manual searching, and is often not stored automatically by electronic medical record (EMR) tracking boards. Objectives: We sought to develop a small, portable program that would perform automatic data acquisition and storage to facilitate further ED crowding research. METHODS: We developed our software program at a large, community-hospital ED serving 85,000 patients per year that utilizes Picis® Pulsecheck EMR and tracking board software (Wakefield, MA). The software program captures industry standard tracking board HTML data. The captured data is then stored and run through a processing engine that extracts the key metrics to be studied; the key metrics are then stored and appended to an additional output file and displayed in real-time for analysis via the web. RESULTS: We utilized our program to track ED data over a 6-week period, and calculated the occupancy rate at 3 to 5-minute intervals. Data acquisition resulted in a non-proprietary standard ASCII output file of approximately 1 MB that can then be opened in any spreadsheet or statistical software. Occupancy rate of the ED varied from 18 to 110 patients, with a mean of 97 patients. Occupancy of the waiting room ranged from 0 to 50 patients. Peak occupancy rates tended to occur in the late evening, with wide daily variation. CONCLUSIONS: The development of an easily customizable program to acquire and store real-time non-proprietary formatted ED crowding data from the major medical record tracking board programs provides a low or no-cost means to widely implement a robust and technically precise method for EDs to perform further studies of the effects, and possible solutions to, ED crowding.

W80) An open source web-based videoconferencing system for education and inter-Hospital teleconsulting: a technical overview : Fabrizio La Mura¹, Giuliana Franceschinis², Francesco Della Corte³, Ezio Storelli¹, Silvia Valsechi⁵, Pier Luigi Ingrassia⁴, Davide Colombo⁴, Roberto Pinna², Federico Barra⁵, Chiara Ronco⁵ : 1. Pain Clinic, Azienda Ospedaliero-Universitaria , Novara, Italy. 2. Dipartimento di Informatica -

Università del Piemonte Orientale, Alessandria, Italy. 3. Dipartimento di Emergenza - Università degli Studi del Piemonte Orientale "A. Avogadro", Novara, Italy. 4. Università degli Studi del Piemonte Orientale "A. Avogadro", Novara, Italy. 5. School of Medicine - Università degli Studi del Piemonte Orientale "A. Avogadro", Novara, Italy.

INTRODUCTION: Hospital network security policies make it often impossible to use synchronous audio-video communication systems such as Skype. We developed a complete multiuser videoconferencing system, with data sharing, application sharing, and slide presentations capabilities. The system works well in firewall protected networks, without violating any policy. **METHODS:** The Computer Science Department developed Meetingpoint, a web based videoconferencing system. It is possible to use the RTMPT protocol on port 80, so potentially every PC connected to the Internet, with or without webcam, can be used to participate in the conference. **RESULTS:** Several University Hospitals in Europe have been connected via Meetingpoint. Every participant was able to send audio-video to other participants, as well as documents and slides. **CONCLUSIONS:** After trying several commercial solutions during the last decade, we now use Meetingpoint as an easy and very effective tool for videoconferencing.

W81) Weblog, a new technique for interpersonal communication : Keyhan Golshani¹, Amir Nejadi¹ : 1. Emergency Department, Tehran University of Medical Sciences, Tehran, Iran.

INTRODUCTION: Weblog is a virtual place that allows us to share our commentaries, events, and opinions with others through the internet, worldwide. For this reason the Emergency Department of Tehran University/School of Medicine decided to start a Persian language weblog for its emergency medicine residents and professors, to evaluate if there will be any effect on their workplace interpersonal communication skills. This weblog contains a home page with posts, comments, calendar and archives. The emergency medicine residents and professors have options to write with their real name or a pseudonym. **METHODS:** We evaluated all posts and comments during a 5-month period as a longitudinal, observational, retrospective study. **RESULTS:** There were about 10540 visitors during the 5 months (mean 76 visits per day). 93.58% of visitors were from Iran, 2.5% from USA, 1.23% from Poland, 0.55% from UK, 0.33% from Canada, 0.32% from Kuwait, 0.25% from Azerbaijan, 0.25% from Brazil, 0.17% from Germany, 0.16% from Turkey and 0.66% from else. There were 129 posts during the 5 months (22% written by faculty and 78% by emergency medicine residents). With regards to comments, there were no limitations and all visitors could post their opinions in the comment section. The content of the posts was: 8% educational, 7% about research problems, 31% about current administrative and management problems in the ED, 7% about news in emergency medicine, 7% about congratulations in special situations, and 40% miscellaneous. There were 614 comments for the posts. 52% of these posts were correlated with the content of posts and 48% were unrelated. We asked the emergency medicine residents to fulfill a questionnaire about their opinion on their weblog 5 months after the start of the weblog and we collected their opinions. **CONCLUSION:** The viewpoint of our emergency medicine residents was that they used the weblog as an adjunct for educational purposes and they wanted to assign more place for institutional posts to ameliorating their professional knowledge and skills. We

believed that this kind of relation between residents and faculties can ameliorate their workplace ambience.

W82) Measurable performance indicators: one method of systematically introducing knowledge in disaster medicine : Heléne Nilsson¹, Anders Rüter¹ : 1. Centre for Teaching and Research in Disaster Medicine and Traumatology, Linköping, Sweden.

INTRODUCTION: Disaster medicine has often been considered to be a descriptive discipline where shortcomings often are expressed in general terms. It is a challenge to find methods that can be used for research in disaster medicine and how results can be evaluated. Disaster simulation exercises are considered as the traditional method for training of personnel in disaster management. Measurable performance indicators have been found to be one tool for evaluation of exercises and have also proven to be useful in various types of management training. The aim of this study is to increase awareness of the possibility to use performance indicators. The performance indicators make it possible to evaluate performance through the whole chain from evidence, via education and implementation to real incidents. **METHODS:** Sets of measurable performance indicators have been developed for 1) prehospital command and control, 2) hospital management, 3) strategic management, 4) staff procedure skills, 5) full scale exercises, 6) pedagogic skills and for 7) military training. These performance indicators have been used in different national educational programs both in lectures, training and exercises, implementation processes and for evaluation of real incidents. The use of the same performance indicators were measured and compared through the whole chain from education and implementation and to the application in real incidents. **RESULTS:** From the first pilot study of performance indicators for prehospital command and control five years of training and implementation passed before results from real incidents could be studied and results analysed scientifically. Other sets of indicators have been used in education and in different studies. Results from implementation of strategic and hospital management and real incidents are not yet analysed to the same degree as prehospital command and control. **CONCLUSION:** The use of measurable performance indicators may be one method of systematically introducing knowledge in disaster medicine through the whole chain from evidence, via education and implementation to real incidents.

W83) Enhancing hospital preparedness levels and safety index to respond to earthquakes : Ahmadreza Djalali¹, Ali Massumi², Vahid Hosseinijenab³, Gunnar Öhlén⁴, Maaret Castren¹, Lisa Kurland¹ : 1. Department of Clinical Science and Education, Södersjukhuset, Karolinska Institute, Stockholm, Sweden. 2. Graduate School of Engineering, Tarbiat Moallem University, Tehran, Iran. 3. Emergency Management Department, Natural Disaster Research Institute, Tehran, Iran. 4. Department of Clinical Science, Intervention and Technology, Karolinska Institute, Stockholm, Sweden.

INTRODUCTION: Hospitals are multifaceted facilities that have an important role as part of the medical response to earthquakes. It is essential that they are fully operational. Lessons learned from previous earthquakes have shown that many hospitals were not functional as the result of collapse or structural damage or due to lack of disaster management plan. Experiences of Iran's most recent earthquakes confirmed that many Iranian hospitals are neither safe nor

functionally reliable during earthquakes. The objective of this study is to establish a method for hospitals in Iran to reach an acceptable safety and preparedness level in case of earthquakes. **METHODS:** This study was performed in 2008-2009, and was the first study regarding non-structural safety and usage of hospital disaster management plans in Iran. Four hospitals were included in the study. Modified methods for improving non-structural safety and establishing a hospital disaster management plan and incident command system were performed. A standard checklist and tabletop exercises were used to evaluate the efficacy of the intervention. **RESULTS:** The level of preparedness of all the studied hospitals was ranked below the acceptable range. Based on ranking and scoring methods, three hospitals were categorised as “correctable,” and one was “unacceptable.” Non-structural safety index was low, also. A hospital disaster management plan and hospital incident command system were absent at all hospitals. Based on some tabletop exercises, it was confirmed that performance of the hospitals in simulated disasters was at a low level. Efficacy of interventions will be evaluated. **CONCLUSIONS:** Although Iran is a disaster prone and vulnerable country, the safety index and preparedness level of hospitals has not improved adequately over time. This study focused only on non-structural safety and hospital disaster management plans; however these measures will prove ineffective, if hospital structural safety is not also addressed. This study was novel in Iran and the method of intervention could be applied on a national level by Iran’s ministry of health.

W84) Volunteerism and civil protection: A method to evaluate the performance of volunteer groups in Greece : Eleftherios-Stelios Lampakis¹, Panagiotis Agouridakis¹, Aspasia Fragedaki¹, Stilianos Kastrinakis¹, Eleftherios Volanis¹, Martha Renieri¹ : 1. EKAB GREECE, Chania, Krete, Greece.

In the contemporary world, the organized action of simple citizens is a necessity and volunteer teams can help. To be effective they need other training and equipment. This is not generally «Volunteerism», it’s a specific type of activity. It has a clear purpose and objective and there is no space for novelties and experimentation. To achieve its objectives should be: 1. Clear purpose and objective of the group 2. Specialization 3. Training and official recognition and 4. Appropriate equipment. Continuous evaluation is of major importance for volunteers. This evaluation must be: 1. Objectively measured 2. Known in advance so it cannot be in doubt by anyone and 3. Not changed by political manipulation. Evaluation of this type, is easy and inexpensive. There is no need for costly equipment, only data. Emerging from the 8 years experience in volunteerism in Greece, in a region that is happy to have the most organized volunteer movement (with 5 team orientated to CP), we propose the following criteria to the authorities: Evaluation: - Participation in actions of CP (as a percentage of the involved to called); Number of members participating in each activity VS expected by the coordinating authority as average percent; Adequacy of equipment and functionality; Knowledge and skills on the assignment; Cooperation with authorities; General appearance of the team. Each sector must be evaluated from a legal authority and has an importance factor varying according to the philosophy of the community. For the Greek reality we propose the following evaluations and importance coefficient as in table 1. The importance coefficient is flexible, and can be modified to guide the evaluation either to the quality or the quantity of the offered services. To elaborate the data, a simple spreadsheet (icon1) is simple to do, saving time and protects from arithmetic mistakes. Concluding, performance evaluation of volunteer teams is easy, cheap and offers a

tool to assist (economically or other) and guide the progress to quality or quantity, as implementation of disaster plans require.

criteria	evaluator	component of evaluation	score	importance coefficient	final value	observations
participation in actions of Civil Protection (CP)	<i>CP based on the records kept</i>	<i>percentage</i>	100	25	25	<i>OK</i>
Number of members participating in each activity	<i>CP based on the records kept (information from the Coordinating Authority)</i>	<i>Average of percentage in all actions where the team participate</i>	87,50	10,00	8,75	<i>OK</i>
Adequacy of equipment and functionality	<i>Coordinating Authority</i>	<i>percentage</i>	45	20	9	<i>need attention</i>
Knowledge and skills on the assignment	<i>Coordinating Authority</i>	<i>percentage</i>	65	20	13	<i>OK</i>
cooperation with authorities	<i>Coordinating Authority or CP</i>	<i>percentage</i>	100	20	20	<i>OK</i>
general appearance of the team	<i>Coordinating Authority or CP</i>	<i>percentage</i>	100	5	5	<i>OK</i>
TOTAL				100	80,75	

icon1. spreadsheet application for the evaluation

criteria	evaluator	component of evaluation	importance coefficient
participation in actions of CP	CP based on the records kept	percentage	25
Number of members participating in each activity VS expected by the coordinating authority	CP based on the records kept (information from the Coordinating Authority)	Average of percentage in all actions where the team participate	10
Adequacy of equipment and functionality	Coordinating Authority	percentage	20
Knowledge and skills on the assignment	Coordinating Authority	percentage	15
cooperation with authorities	Coordinating Authority or CP	percentage	20
general appearance of the team	Coordinating Authority or CP	percentage	5
Total (maximum=100)			100

table1. evaluators and importance factors

W85) Mass Casualty Incidents Training in Arad County : Monica Puticiu¹ : 1. Emergency Department, Arad County Hospital, Arad, Romania.

INTRODUCTION: Objectives: To train emergency personnel and rescue teams from Arad County to manage the incident, communicate with each other, conduct rapid effective triage and ultimately save the maximum number of lives. To test integration with non-medical emergency services in different scenarios of Mass Casualty Incidents. METHODS: We involved medical emergency services and the non-medical emergency services from Arad

County in 3 exercises:

Helicopter Crash – September 2006 – 13 patients (volunteers); Plane Crash with terrorist attack – June 2007 – 34 patients (volunteers); Fire on an island – EUHUROMEX exercise with involve of 10 UE country – September 2008 - 35 patients (volunteers). RESULTS: We evaluate the response time; action at the scene (arrival within 15 minutes/arrival after 15 minutes); structure of incident area; duration of action; cooperation/communication with other services during Mass Casualty Incidents (MCI); media management. CONCLUSION: Short reaction intervals can be achieved by early alerting of Chief Emergency Physician. Good management of MCI involve reaction time < 15 minute, take full charge of all medical organization, triage all victims, organize patient transport to appropriate hospitals. We have the opportunity to review the Mass Casualty Incidents Plan.

W86) Hospital disaster planning: patient characteristics for evacuation and relocation in Belgian hospitals : Luc J. Mortelmans¹, Sven Leys², Marc Sabbe², Olivier Hoogmartens² : 1. Emergency Medicine, AZ KLINA, Brasschaat, Belgium. 2. Univ Hospital Gasthuisberg, Leuven, Belgium.

INTRODUCTION: The high number of inherent risks within a hospital demands a clear planning of the logistic needs for evacuation and relocation of patients within the hospital disaster plan. In Belgium, minimal nursing activity data are registered in all hospitals to evaluate the activities within a hospital. It is never tested if these data are useful for disaster planning. METHODS: An observational cross-sectional prevalence study of selected parameters (walking, wheel chair or bed transport, isolation,...) was performed on 15 specific wards (orthopaedics, abdominal surgery, geriatrics and pneumology) in 4 Belgian hospitals. Secondly, out of the minimal nursing activity registration, selected items collected on the same day were obtained for the same patients. The differences between both measurements and between wards and hospitals were calculated. RESULTS: 401 patients were evaluated and for 258 of these patients the minimal nursing activity data were obtained. In the prevalence study, large differences between wards and hospitals were observed. Using the minimal nursing activity data, specific items could predict with high sensitivity and specificity the logistic needs for evacuation and relocation. CONCLUSIONS: The large differences between specific wards in the logistic needs for evacuation or relocation indicates, as could be anticipated, that one has to plan at the level of each ward. The feasibility and relative predictive value for logistic evacuation or relocation support of specific items of the minimal nursing activity data registration suggests that these data are useful for more hospital wide planning. Further evaluation, national as well as European, is warranted.

W87) Public Acceptance of Triage in Disasters : Jana Seblova¹, Miroslav Prochazka², Karel Antos², Dominika Seblova³ : 1. EMS Central Bohemian Region, Ministry of Health, EMS, Kladno, Czech Republic. 2. Faculty of Military Health Sciences, Hradec Kralove, Czech Republic. 3. Macalester College, St. Paul, MN, USA.

INTRODUCTION: We tried to identify public opinions regarding triage in multiple victim accidents in a pilot study. 17 respondents answered three questions: if they know the triage, what are their feelings about it, and how would they react if their family members were triaged.

Based on the pilot study, we have created a new questionnaire and conducted the presented study looking at USA and CR. We stated four hypotheses: 1. Knowledge of triage is lower in the CR than in USA; 2. Army/rescue systems members are more informed about triage and they accept it more rationally; 3. People with religious faith have better acceptance of triage; 4. Younger people accept triage more rationally. METHODS: The questionnaire was created in two language versions – Czech and English. We distributed it in hard copy in Faculty of Military Health Sciences and in Faculty of Biomedical Engineering. Electronic version was distributed among professionals and among students in Czech Republic and USA. It was possible to fill in the form just once from one computer. Four questions about triage were included along with questions regarding demographic data gender, age, subject of study/profession and faith. We have gathered 231 questionnaires, 147 from the Czech Republic and 84 from USA. 49 respondents were army or rescue systems professionals. RESULTS: We have found higher awareness of triage in CR compared to USA, even if army and rescue systems members were excluded. In rational acceptance we have not found significant difference between public and army/rescue professionals. However, when asked about their feelings none of the professionals expressed anxiety and 9% of the public did. Supposed behaviour in critical situation concerning triage of relatives, all sample groups responded similarly. The highest acceptance of triage was in the age group 31-40. CONCLUSION: We can conclusively support only the hypothesis about higher acceptance of triage by the professionals. Overall we have found high knowledge of triage in our sample nevertheless majority of our respondents were persons with high levels of education. In further research we should include diverse social groups for comparison.

W88) Medical disaster preparedness program in North-Eastern Romania : Carmen Diana Cimpoesu¹, Roberta Branisteanu², Bogdan Zamfir², Mihaela Dumea¹, Alexandru Chitimus², Dan Marciuc³ : 1. Emergency Medicine, University of Medicine and Pharmacy Iasi, Iasi, Romania. 2. Clinical Emergency "Sf.Spiridon" Hospital, Iasi, Romania. 3. Inspectorate for Emergency Situations "Gr.M.Sturdza", Iasi, Romania.

INTRODUCTION: A Multi Casualty Incident (MCI) represents an emergency situation that needs coordinated intervention of emergency services in order to limit and make the accident area safe, to treat and evacuate the victims respecting the international principles of disaster medicine and the pre-established plans. The elaboration of the red plan and the periodic simulations offer the possibility of common and coordinated trainings of all organizations responsible for the MCI intervention. Objectives: To evaluate particularities of MCI simulation exercises in the North-East of Romania; and to compare field parameters with those pre-established in the elaboration of the medical intervention red plan. METHODS: Analysis of 6 MCI intervention exercises in Iasi, Botosani, Suceava, Vaslui districts during the time period of April 1st, 2008 – April 1st, 2009. Direct observation methods and post-event analysis on the basis of written reports and audio-video materials was used. RESULTS: Three exercises have been done in Iasi and one in each of the three other districts. Five to ten intervention services of every district participated, with coordination by the Inspectorate for Emergency Situations "Gr.M.Sturdza" Iasi. A specialist emergency medical doctor from Mobile Emergency Service for Resuscitation and Extrication (SMURD) Iasi was in charge of the medical coordination. Simulations covered different scenarios (train accident, aircraft accident, earthquake, fire,

traffic accident), with the number of victims between 15 and 50. For the victims triage, emergency medical intervention at the site and medical evacuation with both classical and modern means were used: advanced medical centre, disaster ambulance, multiple victim transport means. The duration of the exercises was between 120 and 320 minutes, with a previous preparation of 25-60 days. CONCLUSIONS: Periodic, common and coordinated exercises, and elaboration of intervention plans for diverse scenarios make up the necessary elements for the efficient training of the staff involved in rescues and increase the security of the intervention in the case of a real multi casualty incident.

W89) Barriers to Pre-hospital Medical Care for Earthquake Casualties: A Qualitative Research Study : Ahmadreza Djalali¹, Hamidreza Khankeh², Azadeh Hasani³, Gunnar Öhlén⁴, Lisa Kurland¹, Maaret Castren¹ : 1. Department of Clinical Science and Education, Södersjukhuset, Karolinska Institute, Stockholm, Sweden. 2. Department of Nursing, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran. 3. Emergency Management Department, Natural Disaster Research Institute, Tehran, Iran. 4. Department of Clinical Science, Intervention and Technology, Karolinska Institute, Stockholm, Sweden.

INTRODUCTION: Earthquakes are an important cause of natural disasters in Iran. They have killed more than 180 thousand people during the past 90 years. Following earthquakes, medical teams play a critical role in the disaster response by administering first aid and transporting casualties to appropriate medical facilities. The most destructive recent earthquake in Iran was the Bam earthquake, which killed more than 30 thousand persons and injured some 20 thousand. Medical teams attempted to provide necessary pre-hospital medical care with many casualties evacuated to hospitals throughout the country. The purpose of this qualitative study is to assess barriers to pre-hospital medical care and evacuation during the Bam earthquake, from a managerial perspective.

METHODS: The study was carried out in 2008, using qualitative research method. We conducted ten in-depth interviews with experts and managers of the emergency and disaster medicine system of Iran. Inclusion criteria included a 5-year work experience in the field of disaster medicine and participation at three previous earthquakes.

RESULTS: The most important variables that were noted by respondents were as follows: availability of emergency medical teams, pre-hospital medical care, transportation chain & resources. Lack of standard emergency medical teams, delay of arrival on scene, medical resources deficiencies, lack of a standard evacuation protocol, lack of patient triage and unnecessary activities were some of the barriers to optimal pre-hospital medical care after the earthquake.

CONCLUSIONS: Although disaster management system and health ministry of Iran implemented the response to Bam earthquake immediately after determining its location, there was no organized and systematic pre-hospital response for the casualties. Multiple problems in the disaster response resulted in undesirable and inadequate pre-hospital medical services to casualties. If the health system could reduce some of the barriers, the mortality and morbidity rates could have been lower than they actually were.

W90) PISA ADVANCED RESPONSE IN EMERGENCY (P.I.S.A.R.T.E.): the Italian Contribution in Establishing a Community Civil Protection Mechanism : Gaetano Diricatti¹, Giuseppe Evangelista¹, Monia D'Amico⁵, Claudio Chiavacci², Carola Martino¹, Giuseppe Arcidiacono¹, Paolo Ghezzi⁴, Luca Padroni⁴, Paola Milano⁵, Anna Matteoni³ : 1. Emergency Surgery Group, Pisa, Italy. 2. Fire Brigade, Pisa, Italy. 3.

Italian Red Cross, Pisa, Italy. 4. City Council, Pisa, Italy. 5. P.I.S.A.R.T.E. Project, Pisa, Italy.

In the framework of the European Mechanism the calls for support from the EU States who face different typology of disasters asking support and assistance, are growing.

In this framework, the P.I.S.A.R.T.E. Project, funded by the European Community, is oriented to test the rapid response capability of two modules: 1. Advanced Medical Post with Surgery (AMP-S); 2. Medium Urban Search and Rescue (USAR). The Emergency Surgery Group (GCU) of Pisa is the coordinating beneficiary; the other beneficiaries are: City Council of Pisa, Fire Brigade of Pisa, Italian Red Cross of Pisa. The Italian Civil Protection Department will support these activities through the involvement of its personnel and inviting the foreseen European countries experts (Slovenia, Greece, Malta, Austria, France).

The general objectives of the P.I.S.A.R.T.E. project is related to the “rapid response capability” in order to allow the EU to intervene rapidly within the EU countries and in third countries, in case of emergencies caused by different natural and man made catastrophies. The specific objectives of the P.I.S.A.R.T.E. Project is to reinforce and strengthen the rapid response in the field of health assistance and search and rescue support through the establishment of civil protection modules that Italy can make available for European Civil Protection intervention. The P.I.S.A.R.T.E. project intends to create a mean for the rapid deployment of the two modules through the implementation of the following main activities: training programme, full scale exercise, workshop on drawing up operating procedures, drafting a handbook of operating procedures, deployment of the modules to the field (if requested by the Commission), and dissemination. The former results of the two first international courses are presented.

W91) Hospital disaster drill: from table top to evacuation, a challenge : Luc J. Mortelmans¹, Jan Herrijgers¹ : 1. Emergency Medicine, AZ KLINA, Brasschaat, Belgium.

INTRODUCTION: Although hospitals are legally obliged to organise disaster drills, the frequency, if ever performed, is extremely low and most of the time one doesn't pass the stage of table top exercises. Real time evacuation exercises are unpopular seen the impact on normal hospital functioning. **METHODS:** In cooperation with the fire department and the police we simulated a fire with multiple “wounded” simulants and a training smoke generator on an active ward resulting in a partial evacuation of the ward.

RESULTS: Positive points were the adequate reaction of the trained internal intervention team (health care professionals and technicians), good communication with the fire department, the active support of the management.

Rather negative was the tendency to use primary vertical evacuation, triage and initial treatment on the affected ward, a communication infarction on the emergency department (ED) and the mobilisation of ED personnel to the ward with evacuation of the patients to the ED. The communication to the rest of the hospital was difficult in balancing between reassuring and objective training on the other hand. **CONCLUSION:** Real time evacuation drills are feasible with active support of the management. Training of a designated local intervention team results.

W93) Model for National Disaster Management Research Center : Mohammad mehdi Frouzanfar¹, Shahram Alamdari¹ : 1. emergency medicine, shahid beheshti medical univarcity, Tehran, Iran.

With regards to the overall increase of research in accidents and disasters in the framework for the National Disaster Management Research Center the following should be considered: needs, priorities, resources, evaluation, results and their application. Emergency activities: transportation, telecommunication, critical pathways and debris excavation, fire engine and control, crisis management, supply of the public's main needs and requirements and relief services, resources management, health and medical services, search and rescue, hazardous materials, food and agriculture, energy and fuel, security, recovery and rehabilitation, and mass communication media.

Protecting the country's infrastructures like power plants, large telecommunication centers, emergency service centers and hospitals, blood transfusion center, radio and TV. Organizations are part of the most important cases in management of disasters. Identification and supply of the living requirements under critical conditions, planning of constant service programs by different authorities, resources management programs, methods of application of public and humanitarian potentials under crisis conditions (crisis management based on community), identification of general and specialized trainings for disaster management, planning of prevention and risk reduction programs in crisis management, designing and implementation of drills for preparedness, crisis management strategies design, principles of policy making in crisis management, the way of confronting special event (chemical, biologic and nuclear hazards, mass medial conflicts, oil and hazardous materials, agriculture and drought and terrorism, common understanding in administration of crisis and finally the planning and designing the control center of crisis are all considered as issues of priority in conducting research on accidents and disasters. There are four administration departments of the research center: Idea Production, Publications, Logistic and Applied Research Administration. Different levels must be considered, including doctrinal, policy making, strategic and operative actions and territorial management research.

W94) Functional manoeuvre of hospital disaster planning : Ali Vafaei¹, Hamidreza Hatamabadi¹, Mohamad mehdi Furuzeanfar¹, Ali Arhami dolatabadi¹, Hamid Kariman¹, Ali Shahrami¹ : 1. Shahid Beheshti Medical University, Thehran, Iran.

INTRODUCTION: With the importance of emergency medical practice as a therapeutic specialty both of medical sciences and management science and taking into account our country's rating as 10th country in the world as regards the same, and considering that our country is located in an earthquake prone area and possesses a variety of climates it's logical to think and plan in advance for disaster management and so an emergency reaction program has been prepared and executed in one of referral hospitals in Tehran. **DISCUSSION:** First we define clinical crisis as a situation in which a hospital is not able to cope based on it normal daily capacity. Such situations include incidents which are not normally expected and which

may result in considerable number of deaths and injuries. The modes are then modified as dictated by climatic, cultural and clinical conditions of Iran. An aerial map of shohada of tajrish (for which the study is conducted) is used to depict the positions of field units and command centers both when it's partially dilapidated. Necessary training based on this procedure was provided to the staff and the program was followed to the practice phase and a maneuver was then conducted. RESULTS: The program should be prepared in such a way to constitute immediate establishment of a crisis committee comprised of:

1) head of the hospital who should direct the operation and make contacts to other organizations such as the fire department and the red crescent and 115 Emergency services, 2) Para clinic unit (including laboratory, Radiology and blood bank), 3) nursing unit (triage, coordination), 4) guarding unit and sentinels, 5) dispatching and discharging unit, 6) psychiatric and social work unit, 7) freezers and refrigeration unit, 8) emergency evacuation unit, 9) installations and maintenance unit, 10) logistics and transport unit, 11) communication unit, 12) public relations and media unit, 13) reception unit, 14) bio Nucleo-chemical unit, 15) specialized units.

W95) Faro Portuguese Red Cross experience in mass gathering events : Maria Filomena C. Horta Correia¹, Ana Agostinho¹, Rui Barros², Jorge Bonito¹, Míriam Costa¹, João Ildefonso², Dagoberta Lima¹, Jorge Martins¹, Milai Palminha¹ : 1. Cruz Vermelha Portuguesa, Faro, Algarve, Portugal. 2. Moto Clube Faro, Faro, Algarve, Portugal.

INTRODUCTION: The experience of Portuguese Red Cross, Faro Health Unit of the District Delegation of Faro in the organization of a medical device for support of participants of Faro Annual Bike Meeting, began in the 90's collaborating with Motoclube de Faro and the zone Health Units. **METHODS:** We present data from 1997 to 2001. The health structure installed at the meeting covered all incidents inside the place and the local roads that present higher risk of accident, with ambulances, medical car, bikes with the respective crews and a health unit with Zone of Attendance and triage, Administrative Sector, Logistic Support and Communications, Resuscitation and Trauma, Observation Room (OR), small surgery, with the human resources adjusted and functioning in 24 hr shifts, covering the total period of the event. **RESULTS:** The total victims attendances, treated between 1997-2001, increased gradually with the number of participants, but the emergency situations, SO and evacuations numbers to the hospital units of the town, remain the same. In the period of 1997-2001, there were no deaths in the area of the meeting, but the accidents number in all the region of Faro, with motorized vehicles of two wheels, was higher, compared to ours (5,9 to 2,5 accidents/10 4 inhabitants). Most of the problems were burnings, wounds, allergies, and headache. The cases of OR had been, cardiac situations, diabetes, asthma, trauma, food poisoning and alcoholism. The emergency room was requested in situations of multiple trauma and cardiac situations. **CONCLUSIONS:** With a Health Unit in the region meeting place, attending to their situations, the patient number in the local Health Units diminished promoting better and rapid treatment to all with higher health improvement and life expectancy. The larger number of motorbikes does not increase proportionally the number of accidents and deaths, comparing to other periods in the region, with higher circulating traffic. In mass gathering events, with a lot of traffic, the installation of medical structure in the place of the event, contributes to more efficient and high quality health

assistance, promoting the health of the citizen.





W96) EUHUROMEX 2008-SMURD Arad Intervention : Monica Puticiu¹ : 1. Emergency Department, Arad County Hospital, Arad, Romania.

INTRODUCTION: The main objective is to simulate and observe the management and communication exercises conducted at international level and the cooperation of the technical intervention teams. **METHODS:** The exercise take place on the territory of Hungary and Romania, which promptly accepts assistance from EU-state (Austria, Bulgaria, Croatia, Germany, Slovakia, Slovenia, Poland), additional assistance was requested through the community mechanism.

The scenario field exercise shall last for 3 full days.

Medical emergency was simulation occurred by SMURD Arad in collaboration with rescue teams from Slovenia, Croatia, Bulgaria involved in simultaneous exercises:- accident between street car and minibus – underwater rescue sunk minibus; - fire on an island – island rescue: aerial rescue – helicopter rescue and boat rescue in the last day of scenario. **RESULTS:** We evaluate the number of victims, the kind of victims after triage and the communication and

collaboration between the rescue forces. From the accident between street car and minibus we have 2 red triage victim and 8 black. From the fire on an island we have 35 victims: 9 red, 22 yellow, 11 green and 3 black. We need helicopter rescue for 3 victims. We get over language barriers using English language, we integrate different chains of command, different methods of approach. CONCLUSION: We achieved the aim of exercise to: test and train the structures for command and control, co-ordination, communication, logistics and information of the media and public; and examine the interoperability of response teams and their equipment coming from different countries. Both neighboring countries and European countries lay a great emphasis on regional cooperation, particularly on bilateral disaster assistance.

W97) Fight or flight: will nurses and ambulance personnel go to work in disaster situations? : Philippe Dewolf¹, Luc J. Mortelmans¹, Jenny Luyts¹, Harald G. De Cauwer¹, Marc B. Sabbe² : 1. Emergency Medicine, AZ KLINA, Brasschaat, Belgium. 2. uz gasthuisberg, leuven, Belgium.

INTRODUCTION: When disaster strikes, getting care to the victims is at the top of everyone's attention. But who will provide that care? It is essential that health services are able to manage the major demands that will be placed upon them. Healthcare workers will be at the forefront of the response to a disaster, and if services are to be provided at sufficient levels, absenteeism from work must be minimized. METHODS: To evaluate if our hospital nurses and ambulance personnel would come to work in disaster situations, we presented them a questionnaire looking for their knowledge on – and willingness to work in eleven hypothetical disaster situations apart from their demographical data. RESULTS: 264 returned the questionnaire (150 nurses and 114 ambulance personnel). Main figures are presented in table 1. Knowledge of the ambulance personnel is significantly higher than the score of the nurses. We think that this a matter of self estimation more than on effective knowledge (with exception of the fire dept manned ambulances). The ambulance personnel are more willing to work in disaster situations probably as they are more used to being confronted with risk situations as compared to hospital nurses. Although having children was not a limiting factor, women are less convinced to work than man. Effective protective equipment, good and timely information and possibilities to contact the family are the main factors to convince those who are in doubt. Nevertheless there will always be care providers that won't come to work, even if it costs them their job. CONCLUSION: Apart from people inflicted, one should calculate drop outs in health care providers in disaster situations. Providing effective protective equipment, good information and communication channels with the family can minimise this group.

scores for nurses and ambulance personnel on hypothetic disaster scenarios

	knowledge score (on 10)	inherent risk score (on 10)	inherent danger score (on 10)	goes to work	works under conditions	doubts seriously	does not go to work
	mean (SD)	mean (SD)	mean (SD)	%	%	%	%
Natural							

disaster							
Nurse	3.3 (2.5)	2.3 (2.1)	5.7 (2.9)	22	67	8	3
ambulance	5.2 (2.6)	3.1 (2.9)	6.3 (2.6)	67	31	1	1
Bombing							
Nurse	2.6 (2.3)	3.6 (2.3)	6.6 (2.9)	25	51	17	7
ambulance	4.3 (2.8)	4.2 (2.7)	7.3 (2.3)	56	38	4	2
Influenza pandemic							
Nurse	4.9 (2.8)	5.3 (2.4)	5.1 (2.6)	37	54	8	1
ambulance	4.8 (2.7)	5.1 (2.5)	5.8 (2.3)	48	42	9	1
Avian Influenza pandemic							
Nurse	3.1 (2.5)	3.7 (2.3)	5.4 (2.8)	26	54	19	1
ambulance	3.8 (2.6)	4.2 (2.5)	5.8 (2.6)	45	42	7	6
SARS							
Nurse	2.5 (2.2)	2.8 (1.8)	6.4 (2.8)	14	55	27	4
ambulance	3.1 (2.5)	3.2 (2.3)	6.4 (2.7)	38	44	14	4
Ebola							
Nurse	2.7 (2.6)	2.3 (1.9)	7.1 (2.6)	7	44	33	16
ambulance	2.7 (2.4)	2.3 (2.1)	7.0 (2.8)	29	37	26	8
Smallpox							
Nurse	3.5 (2.9)	2.9 (2.4)	5.1 (3.0)	26	56	16	2
ambulance	3.6 (2.4)	2.5 (1.9)	5.2 (2.7)	43	43	14	0
chemical incident							
Nurse	2.4 (2.3)	4.6 (2.7)	6.7 (2.7)	14	50	24	12
ambulance	4.5 (3.0)	5.5 (2.5)	7.7 (1.9)	44	45	8	3
biological incident							
Nurse	1.9 (1.8)	2.8 (2.2)	6.3 (2.9)	9	46	34	11
ambulance	3.0 (2.5)	3.8 (2.8)	7.3 (2.5)	31	45	17	7
Nuclear incident							
Nurse	2.8 (2.5)	4.0 (2.6)	7.6 (2.4)	10	37	34	19
ambulance	3.9 (2.9)	3.9 (2.8)	8.3 (1.8)	27	45	13	15

Dirty Bomb							
Nurse	1.4 (2.0)	2.4 (2.0)	6.6 (3.3)	6	39	36	19
ambulance	2.5 (2.5)	2.6 (2.2)	7.7 (2.6)	29	43	19	9

W98) Tactical Medicine and Disaster Management : Massimo Azzaretto¹ : 1. ED, Azienda Ospedaliera Sant'Anna Como - Presidio Ospedaliero Cantù, Cantù, Italy.

BACKGROUND: Military conflicts have provided many of today's EMS tools. Safe transportation of the casualties to the hospital came from Larrey's flying ambulance. Treatment of a wounded soldier by enlisted men at the point of wounding derives from trench warfare in WWI through the combat medics of WWII. Use of aircraft to expedite transport of the casualty to a hospital came from air evacuation procedures developed in Vietnam. **DISCUSSION:** What we could learn today from military medicine?

The TCCC guidelines published in the PhTLS Manual (6th ed) represent the starting point for the standardization protocol of Tactical Emergency Medicine Service (TEMS) an evolving emergency medicine subspecialty. The concept is simple: the right care at the right time. The difference between TEMS and conventional EMS lies in the context within which medical decision are made. Scene security, severity of the environment and availability of medical equipment are key modifiers of the medical assessment and treatment plan. Although many of the basic medical skill sets are similar, TEMS personnel receive specialized training to operate in tactical environment. Some traditional procedures and practices are modified for use in the tactical environment and others are unique: airway management, CPR, spine immobilization and hemorrhage control are key areas where conventional and tactical standards of care differ. Unique aspect of TEMS is represented by the need to subordinate the medical activity to the overall mission. TEMS personnel provide concise and often limited medical interventions, operate with minimum supplies, often must maintain light and noise discipline while providing care, are trained to operate remote assessment in the patient survey, constantly perform risk-benefit analysis based on the environmental situation. They are trained in multiple specialties (not only medical issues) to realize their tasks during all the phases of the mission and are able to managing continuous and sustained operations. So, for those reasons, the TEMS personnel possess a unique set of technical and operational skills that made them ideally suited to assist in the response to large-scale disasters.

W99) Disaster preparedness status among rheumatoid arthritis patients in Japan : Jun Tomio¹, Hajime Sato², Hiroko Mizumura³ : 1. St. Marianna University School of Medicine, Kawasaki, Kanagawa, Japan. 2. Graduate School of Medicine, The University of Tokyo, Tokyo, Japan. 3. Faculty of Human Life Design, Toyo University, Asaka, Saitama, Japan.

INTRODUCTION: Recent disasters have raised concerns about disaster preparedness for chronic disease patients. Rheumatoid arthritis (RA) is one of the diseases that require special supports under disaster situations. The objectives of the study are to show the current preparedness status among RA patients in Japan, and to find out the factors associated with preparedness status. **METHODS:** The study subjects were the members of a nationwide RA

patient group in Japan. Of more than 20,000 members, 1,477 who lived in the municipalities where the Disaster Relief Law (DRL) was applied from January 2004 to December 2006 were enrolled in the study. DRL was applied to 113 municipalities for 16 events during this period. Self-administered questionnaires were sent to the subjects by mail. The main outcomes were the achievements of four domains of preparedness; medication treatment (Pm), access to healthcare facilities (Pf), household level preparedness (Ph), and community level preparedness (Pc). The subjects were also asked about the damages caused by the disasters, general health status, comorbidities, and socio-demographics. The achievement of preparedness was summarized for each domain, and the factors associated with preparedness status were determined by using multivariate logistic regression models. RESULTS: Of 1,477, 664 (45%) responded validly. Of these, 572 were under treatment of RA. Mean age of 572 subjects were 62.7 years, and 533 (93%) were women. Overall, Pm was achieved by 83% of the subjects, while Pf, Ph, and Pc were achieved by 34%, 52%, and 27%, respectively. Patients living alone were likely to have poorer Ph (odds ratio (OR) 0.5, 95% confidence interval (CI) 0.3-0.9) compared with those lived with family. Those with comorbidities were likely to have better Pm (OR 1.8, 95%CI 1.1-3.1), Pf (OR 2.3, 95%CI 1.5-3.4), and Ph (OR 1.5, 95%CI 1.0-2.3) compared with those without.

CONCLUSIONS: Disaster preparedness was not achieved sufficiently among the RA patients in Japan even those who lived around disaster affected area. Special supports should be required for those in vulnerable situations including the patients living alone.

W100) Impact of Hurricane Katrina on Healthcare Delivery in New Orleans : Deborah E. Sibley¹, Lala M. Dunbar¹, John Couk¹, James Aiken¹, Keith VanMeter¹, Cathi Fontenot¹, James Moises², Peter DeBlieux¹ : 1. Medicine/Emergency Medicine, LSU Health Sciences Center, New Orleans, LA, USA. 2. Tulane University Medical Center, New Orleans, LA, USA.

INTRODUCTION: Aug 2005, New Orleans (NO) met Hurricane Katrina. In a city ill-prepared, extensive damage from rising water caused the closure of medical facilities throughout NO. We examined the impact Katrina had on healthcare. METHODS: The LSU Emergency Medicine (EM) Research Team compiled a synopsis of what occurred, how it occurred and was handled. Data on resources, facilities and programs in operation prior to the storm, during the aftermath and to the present is addressed. RESULTS: Before Katrina 22 area hospitals (4400 bed) were seeing 500,000 pts/yr. 3 hospitals in Jefferson Parish remained open throughout the ordeal. 4,486 physicians were displaced forcing closure of all 9 NO hospitals; 25% are still displaced. By Feb '06, 3/9 hospitals had reopened at 20% former capacity. Charity Hospital, Louisiana's largest, remains closed but its sister hospital, University reopened Nov '06 at 179 beds (550 pre-Katrina). Today, 15 hospitals in the region are open (2000 beds). 23,500 personnel were furloughed. Immediately after the storm specialty care was essentially absent except for EM. EM MCLNO visits dropped from 132,472 in FY'05 to 41,223 in FY'07. Outpatient(OP) clinic visits plummeted from 261,021 in FY'05 to 46,915 in FY'07. Mortality increased 47% in the aftermath of the storm. More than 33,000 Volunteer Health Practitioners (VHP) responded to NO with the American Red Cross deploying another 220,000 volunteers to assist recovery. EM residents and faculty responded by opening a MASH unit at the NO Convention Center(CC), by providing staff for the medical ship, Comfort, by staffing a clinic serving the EMTs and firemen, and by reopening the Algiers Community

Clinic. The MCLNO CC unit later moved to the empty Lord & Taylor department store until reopening University Hospital. Patients requiring hospitalization were transferred to area full-service hospitals. CONCLUSION: The Katrina experience led to major changes in disaster management. Legislative acts have emerged protecting VHP. This study is a portrait of what happened in NO which may serve as a resource for future large-scale disasters. The Southeast Louisiana medical community continues to recover.

W101) No-cost Electronic Triage : Hiroyuki Nakao¹, Tsuyoshi Yoshida¹, Noboru Ishii¹, Yuji Maeda², Takahisa Kawashima¹ : 1. Disaster& Emergency, Kobe University, Kobe, Japan. 2. Kobe University Hospital, Kobe City, Japan.

INTRODUCTION: Triage tags are no longer only made of paper; in recent years electronic versions have come to be developed. However, despite their convenience, many increased costs and technical issues remain. We have invented an electronic triage system that lowers costs as much as possible and that can be readily and easily used by anyone, and we have tested the features of its prototype. METHODS: Our system uses a portable telephone camera to photograph the paper triage tags in normal use and transmit them via email to a server. A base station (headquarters) gains access to that server with a pre-assigned password. In specific cases, searches can be made on these transferred images, which have appended locational information obtained from GPS features. Patient information can be instantaneously conveyed via this data to a medical facility, where the aggregate data can be instantaneously viewed. In this study, we have investigated the system's functionality and the accuracy of its information transfer. RESULTS: The character recognition of sent images by the system is more than sufficient. Furthermore, both the send location and the sender are automatically identified, and the specific location of the sender is nearly exactly accurate. However, we also uncovered flaws: camera phones configured with higher pixel resolutions saw a drop in send speed, and there could be too many systems being operated in an emergency. CONCLUSION: By setting up a single server, multiple organizations on a national level will be able to use the system independently and will be able to respond to multiple cases. We have developed the system so that it is not necessary to learn any basic operations and so that it can be used without any special equipment. The system is not only limited to times of disaster—it can also be put into practical use for day to day emergency operations for an extremely low cost. We anticipate that making use of this system in standard emergency operations will make the user all the more experienced, and that the accurate transmission of information from the scene of an emergency will allow the admitting medical facility to ascertain the facts prior to admission of the patient.

W102) Why would ED personnel report to work during Pandemics? : Efstratios Photiou¹, Franco Tosato², Dino Gasparin³ : 1. Pronto Soccorso Ospedale Sant'Antonio, Dip.Interaz. Pronto Soccorso e Medicina d'Urgenza ULSS 16/Azienda Ospedaliera/Università di Padova, Padova, Italy. 2. Dip.Interaz. Pronto Soccorso e Medicina d'Urgenza ULSS 16/Azienda Ospedaliera/Università di Padova, Padova, Italy. 3. Pronto Soccorso Ospedale Sant'Antonio, ULSS 16 Padova, Padova, Italy.

BACKGROUND: Pandemics. The possibility of an Avian Flu (H1N5) pandemic was followed by the ongoing Swine Flu (H1N1) Pandemic (to date: 52,160 cases; death toll: 231). So far, the

swine flu seems to be mild; though, next fall is deemed to be critical, especially in case of changes or combination of the virus with other ones. EDs are the frontline services that will have to face flu-infected patients. **DISCUSSION:** The poster will display the results of a (still ongoing) survey aiming to understand (and fulfill) ED-personnel's perceptions, in order to assure that ED healthcare givers will report to work during pandemics.

W105) Influenza Pandemic? : Efstratios Photiou¹, Massimo Azzaretto³ : 1. Pronto Soccorso Ospedale Sant'Antonio, Dip.Interaz. Pronto Soccorso e Medicina d'Urgenza ULSS 16/Azienda Ospedaliera/Università di Padova, Padova, Italy. 3. Azienda Ospedaliera Sant'Anna (CO) - Presidio Cantù, Cantù, Italy.

INTRODUCTION: Microbiologists recognize the inevitability of an influenza pandemic. On the converse, the media's interest waned. After the fear of a possible avian flu pandemic, the world is now experiencing a swine flu epidemic; thus, the risk of pandemic flu seems underplayed. Emergency Medicine departments (EMD) are healthcare areas, where the possibility of an infectious disease threat is paramount. On the basis of the results of a survey done in an NE Italian EMD (140,000 accesses/year) by one of the authors one year ago (in publication), in an avian flu pandemic setting, we performed the same survey in another EMD (30,000 accesses/year) in the NW of Italy to understand how healthcare professionals face the issue one year after.

Aims: 1) to assess how healthcare professionals consider their training towards infectious diseases epidemics/pandemics; 2) assess how risk perception for self/family and consequent stress affects attendance pattern/willingness to work during pandemic avian flu; 3) suggest means to reduce absentee impact through meeting personnel's needs/perceptions. **METHODS:** Anonymous questionnaire distributed to ED personnel (physicians, registered nurses, ward clerks) called to respond during pandemic avian flu. **RESULTS:** 1) The majority feel informed about avian flu, and are willing to report. 2) Family safety is the grand issue. 3) Timely information, protocols, and periodic courses and drills with adequate protection means are considered paramount; active participation in acquiring information and training can create the sensation of making part of the whole system.

W106) Hospital Disaster Preparedness Simulator (HDPS) for Research and Training in Disaster Medicine : Fabrizio La Mura¹, Silvia Valsechi², Federico Barra², Luca Carenzo², Chiara Ronco², Ala Mahamid², Francesco Della Corte² : 1. Pain Clinic, Azienda Ospedaliero-Universitaria , Novara, Italy. 2. Università degli Studi del Piemonte Orientale "A. Avogadro", Novara, Italy.

BACKGROUND: HDPS is a cooperative effort of a research group born within the Medical School and Information Technology Department of the Università del Piemonte Orientale "A. Avogadro". **Goals:** The goals of HDPS are: 1) Evaluating the Hospital preparedness in case of either massive arrival of patients or in case of building failure, or both; 2) playing a particular role within the game, facing realistic problems related to communication (communicating to the EMS, to other Hospitals, to local Government, etc) and other relevant issues.

DISCUSSION: How it works: the virtual world and its components such as buildings, roads, railways, rivers, hospitals, industrial facilities, etc are easily assembled by a graphic editor.

Graphics and interface are completely customizable and tailored to provide the best way to get the “big picture”, as being in a “control room”. Other relevant aspects: Hospitals, as well as other key-buildings and infrastructures within a vast metropolitan area, are represented as bi-dimensional grids, in order to better understand the logistic issues. Of course every building may be composed of several floors, and in general every building or environmental element is represented as a group of grids logically interconnected. For hospitals, a typical setting is Triage area, CT scan and Xrays, Emergency wards, ICU, Operating Rooms located at “ground zero”. Other floors may host other wards, as well as every key-structure (Oxygen plant, electricity, etc). Regular wards may easily be changed in Red, Yellow and Green areas, according to the needs of the players facing the situation. Some keypoints in the technology used: XML (Extensible Markup Language) has been chosen as an intermediate layer to structure the worlds. It is possible to obtain sharable XML libraries containing patients, resources and general environment, with the potential to be represented as bi or three dimensional graphics.

W107) Pain Control in Mass Casualty Incidents : Fabrizio La Mura¹, Francesco Della Corte², Federico Barra², Luca Carenzo², Chiara Ronco², Silvia Valsechi², Ala Mahadim², Ala Mahadim² : 1. Pain Clinic, Azienda Ospedaliero-Universitaria , Novara, Italy. 2. Università degli Studi del Piemonte Orientale "A. Avogadro", Novara, Italy.

BACKGROUND: A simple definition of disaster implies the imbalance between needs and available resources. Pain management in disasters' victims is a crucial issue in preparedness, response, recovery and mitigation phases. The choice of the best pain therapy in victims of disasters has few scientific evidences to confer the ideal prescription. As well, to give the best treatment is hard in complex and possibly dangerous settings. The main problems that need to be addressed and that are different from the normal setting of Acute and Chronic pain services, in disasters, are the keypoints we focus on: (1) Inadequacy of intravenous injections, (2) Inadequacy of refrigerated drugs, (3) Presence of multiple victims on the scene, (4) Choice of the ideal drug(s) to administer. **DISCUSSION:** As far as (1) is concerned, iv injection is not effective, for hygienic and logistic reasons, while oral or inhalatory drugs are to prefer; (2) The hostile setting impairs most of the drugs because of environmental variables including temperature; (3) It is necessary to rapidly determine the welfare priorities, choosing for each patient the best pain management considering the physic and logistic possibility to reach each victim; (4) The “ideal” drug should be light and compact, temperature independent, must have a high Therapeutic Index, must not be dependent on intravenous infusion, should be safe for the stability of the patients' vital signs. **Conclusion:** Opiates can be considered first line drugs. The ideal opiate should be orally absorbable, self-administrable, rapidly absorbed into the systemic bloodstream, and must have a rapid onset, possibly not susceptible to first-pass liver metabolism, and rapidly reversible.

W108) Disaster Triage Tags: Is One System Better Than Another? : Kavita Varshney¹, Mohind Hamd¹, James Mallows¹ : 1. Emergency Department, Sydney West Area Health Service, Sydney, NSW, Australia.

INTRODUCTION: Aim: To determine which of the disaster triage tag systems in use in

Australia and New Zealand is better in terms of the time taken to complete the triage and the ease of use. **METHODS:** This is a prospective cross sectional study. A disaster scenario was created and mock patients were provided with a variety of observations and clinical information to allow them to be triaged in a disaster sieve. Twenty-four medical and nursing staff trained in disaster triage from Sydney West Area Health Service were recruited to participate. Six different triage tag systems available in Australia and New Zealand were trialled. Each participant triaged ten patients with each triage tag system. The ten patients used were different for each of the tag systems and were standardised for acuity and triage category. The time to complete the triage of the ten patients with each different tag system was measured. The participants then completed a questionnaire with regards to the ease of use of the different tags and were asked to nominate the tag that they found the easiest to use. **RESULTS:** The tag that required the least time to complete on average was the Victorian cruciate fold up tag which took an average of 6.62 minutes to triage ten patients, while the average time for all systems 7.77 minutes. Of the twenty-four participants, fifteen (62.5%) found the New Zealand style tags of an individual coloured tag for each triage category the easiest to use. Participants found the South Australian and Tasmanian tags the hardest to use as they required a great deal of turning and folding. **CONCLUSION:** This study demonstrates that New Zealand style of tag (four individual different coloured tags) was the easiest to use, and preferred by 58.3% of participants. The Victorian style of tag (cruciate fold up) was found to be efficient in terms of the time to complete a triage. We recommend that one of these tags be adapted for use as a nationwide system.

W109) The Development of a Mobile Medical Disaster Response Cache for a Metropolitan Centre : Fergal H. Cummins¹, Alan Garner¹, Kavita Varshney² : 1. Retrieval, CareFlight, Sydney, NSW, Australia. 2. Westmead Hospital, Sydney, NSW, Australia.

INTRODUCTION: The aim of this study is to describe the implementation process for the development of a mobile medical disaster response cache for Sydney's central business district (CBD). **METHODS:** A review of the implementation process was undertaken. **RESULTS:** A four stage process was identified. Stage 1: Following a review of the medical response to terrorist attacks in London and Madrid a plan was devised by CareFlight to mitigate against the potential of similar events in Sydney by developing an operational structure to deliver critical care capability in the pre hospital environment. Stage 2: Development of a standard operational policy including pre-determined response, method of activation, provision of identification, specific equipment and personnel training. Stage 3: Liaison with other emergency response services. Stage 4: Ongoing review updates and training. **Discussion: Philosophy:** CareFlight provides a helicopter medical retrieval service in the Sydney CBD. At any time of the day or night CareFlight has a minimum cohort of 35 critical care, pre-hospital and disaster trained physicians dispersed throughout Sydney. Each physician carries a generic critical care pack with advanced medical equipment and drugs. It is expected that each physician could provide full critical care capability for only one patient. The ability to provide critical care personnel and equipment capability supplemental to existing ambulance resources, would be expected to optimise care of pre-hospital victims specifically in the event of a multi site disaster. **CONCLUSION:** There is a clear rationale for deploying appropriately trained and equipped medical personnel in the setting of a medical incident. The approach used may assist other

metropolitan agencies in developing similar response plans in the setting of a urban medical incidents.

W110) Improving situational awareness during putative mass casualty incidents (MCI) with utilization of the Health Alert Network (HAN). : Thomas E. Terndrup¹, Ziad N. Kazzi², Nancy Flint² : 1. Penn State, Hershey, PA, USA. 2. Emory University, Atlanta, GA, USA.

BACKGROUND: HAN is a widely disseminated method used for emergent health information. It enables rapid communication between local, state, and federal health authorities, and community health organizations. The Department of Health (DOH) utilizes HAN as their initial communication source in an incident. We describe optimization of HAN within the Healthcare Facilities Partnership of South Central Pennsylvania (HCFP), a 16 hospital coalition focused on surge capacity enhancement in the 8 counties of south-central Pennsylvania.

METHODS: 2 unscheduled, exercises were performed using HAN. The alert system was tested in coordination with the DOH via a drill within the HCFP to assess its effectiveness.

All hospitals within the HCFP were contacted to confirm their participation in HAN. During the drill, respondents were asked to confirm receipt of the message by logging into the alert system. The hospitals with less than a 100% response rate were then contacted to determine what failed within the system. The hospitals were notified that the drill would be repeated in two weeks time, and were instructed on methods of improving on their utilization of HAN.

RESULTS: 76% of hospitals confirmed their involvement in HAN. After the first alert was sent, 45% of the representatives confirmed after 4 hours. Of all the representatives, 52% confirmed receipt of the message after the exercise. Reasons cited for failure to confirm included problems with the security code, forgotten PIN numbers, or the recipients were unavailable. Optimization of this communication method through representative status update and awareness of HAN were employed by the HCFP. A second exercise performed after system optimization showed 100% of hospitals confirmed their involvement. After the second alert was sent, 47% confirmed after 1 hour. Of all the representatives on the updated HAN list, 59% of these individuals confirmed receipt of the message.

CONCLUSIONS: The HCFP enhanced the effectiveness of HAN through increasing awareness of the system and refining the HAN representative list in cooperation with the DOH.

W111) Blast Injury Simulation Training for Public & Emergency Health Decision Makers. : Ziad N. Kazzi¹, Thomas E. Terndrup² : 1. Emory University, Atlanta, GA, USA. 2. Penn State, Hershey, PA, USA.

Introduction: Blast injury training to simulate key decisions in a catastrophic mass casualty incident (MCI) were developed by subject matter experts (SME's) and computer programmers. There are no high fidelity training tools available that integrate decisions across the entire healthcare spectrum, address fragile populations & age extremes, and measure outcome metrics. A portable, wireless network provided training in an 8 county area with 17 acute care hospitals and multiple response agencies.

Methods: The SME's designed a document to produce a simulated bombing of an indoor arena

with 5,000 people in attendance. The SME's included pediatric, geriatric, emergency response, public health, intensive care, emergency medicine, emergency medical services, and trauma expertise. Decisions for six different key decision makers (from scene response, to county emergency management, to hospital based providers) making an average of 10 decisions each during the first 24 hours of the incident are simulated.

The MCI simulates a scenario in which up to 2,000 casualties occur, with four triage levels identified (green 1,500 people, yellow 300, red 150 and black 50). Importantly, 75 critically injured children and 75 critically injured older adults occur overwhelming regional resources. Efficient triage, extra-regional transport after limited on-scene stabilization is necessary for optimizing survival. Outcome metrics include detailed decision matrix, predicted survival, and an improved understanding of inter-dependencies of MCI decisions.

Results: To date, 735 providers have been trained in ten 2-hour sessions. Predicted survival rates for red & yellow triaged patient varied (range 14% to 62%), compared to an optimized hypothetical response. Regional elder capacity and capability was greater than pediatric measures. Participants judged the experience as highly relevant and an excellent learning tool, including 65% indicating local procedures could be changed as a result of this activity.

Conclusion: A catastrophic MCI is created to exercise key decisions important in optimizing survival within a high-fidelity simulation.

W112) Design of Disaster center hospital in North West of Iran : Samad Shams vahdati¹, Ehasan Dadkhah², Ahmad Shams vahdati³, Alireza Ala¹ : 1. Tabriz university of medical science, Department of emergency medicine, Tabriz, Iran. 2. Sahand university of TECH, department of civil engineering., Tabriz, Iran. 3. Iranian organization for engineering order of building , Tabriz, Iran.

INTRODUCTION: Worldwide, more than 3.4 million lives were lost owing to disasters over the past century. The hospital provides the safe place for patients to go when suffering problems and provides a service to the casualties. However, we can expect that most of the hospitals in East Azarbaijan won't be able to serve patients during a large disaster so, in regards to these issues, we designed a hospital that will not only be able to serve in ordinary situations, it could stand in a disaster. **METHODS:** We studied the topography, tectonic risk, main roads, communication and facilities in North West of Iran. This building was identified for crisis management of North-West of Iran. This area includes 4 states and East Azarbaijan (Tabriz), and was chosen because it is large and well-equipped. **RESULTS:** The tectonic situation of Tabriz shows that this city is above a seismic fault so this made us peruse the area thoroughly to be sure we identified an area out of fault lines. We also considered the available road and railway (metro) in choosing a sufficient place for constructing a building, and so we chose El Goli for this purpose. The next part was to calculate the building that at first we modeled in the ETABS Nonlinear version 9.2.0 by using ACI-318-02 codes, but since this is a special building that should give service during large earthquakes and other nature hazards we check it again with FEMA-356 code. **CONCLUSION:** Our team, with this purpose, gathered and decided to perform the basic steps in designing a hospital. We concentrated on medical necessities, structural design (choosing the best kind of building system that is performable in Iran by considering all of seismic requirements etc,) and architecture of the building

(considering the all aspect of our culture and patient's characteristic according to the environment's impact on them in order to get better results during the period of remedy.)

W113) Civil Unrest and Rioting : Efstratios Photiou¹, João Guimarães Garcia² : 1. Pronto Soccorso Ospedale Sant'Antonio, Dip.Interaz. Pronto Soccorso e Medicina d'Urgenza ULSS 16/Azienda Ospedaliera/Università di Padova, Padova, Italy. 2. Portuguese NHS/Navy, Portugal, Portugal.

Several events may be cause for Mass Demonstrations with Eventual Potential for Violence. That potential may be anticipated, prevented or minimized. The time, scope, area of occurrence, possible injuries and their impact on EDs, are core issues. Civil unrest: groups/individuals feeling that their needs/rights are not met by society/system.

It can occur anywhere, anytime. It includes: strikes, civil disobedience, demonstrations, riots, rebellion, revolution. Reasons: racial or religious conflict, unemployment, famine scarcity or excessive prices of goods, unpopular actions.

Civil unrest may turn into Mass Gathering (>1000 people). Pack Psychology takes over: mobs are unpredictable and exhibit herd behavior, ending up to riots. Riots are chaotic, involving vandalism and property destruction. There is, usually, a "trigger": pre-existing tensions are ignited; soon the situation gets out of control. Targets: shops, cars, buildings, hospitals, banks, worship sites, etc.

Vulnerability analysis: large cities are most vulnerable to riots; they offer buildings, institutions, banks, cars, transportation, hospitals. Hazards analysis: looting, vandalism and arson are most common. To face health problems inherent to riots, a safety protocol helps to organize a healthcare facility. Core issues are: extension of interested area, volume (gross number of participants), accesses to and from the area, probable duration of riots, distance from hospitals (if functioning), weather.

Security of teams and premises is paramount; authorities (if still existent) must provide absolute, effective protection. A Rally Point will be created and security guaranteed. Adjacent to that, an AMP will be organized, away from rioting areas/targets, possibly on high ground; consider breeze direction. It should have shelters, decontamination showers, draining/water collection facility, latrines and fresh water. Patients and refugees must be encouraged to cooperate with the staff according to their skills.

Expected pathologies: Violent: blast, burn, gunshot, blade, crowd crush, stampede, fractures, rape, conditions due to use of RCA (Riot Control Agents); Psychological: fear, post-rape, children astray from parents; Normal: cardiac, metabolic, psychiatric, hyper/hypothermia, dehydration, hunger, etc.

W114) The Effectiveness of a Newly Introduced Life Saving Implement in Hospital Fire Disaster : Ho Jung Kim¹ : 1. Soonchunhyang univ., Bucheon, Korea, South.

INTRODUCTION: The purpose of this evaluation is to assess the newly introduced implement savingsun to save many patients in a hospital fire disaster. **METHODS:** We compared 3 kinds of saving devices and constructions which were Descending life line(D), Air cushion(A), Escape chute(E) which had been used and introduced before and the newly produced implement "savingsun(S)". This study was performed with a total 9 people who were randomly

collected in a university on the 4th level of a building which was about 14 meter high. We prepared 3 patient models (both long leg splinted, just intravenous fluid, bedridden) and divided the people into groups of 3 in each model. RESULTS: Mean age of total 9 people was 24 and 6 were male. The arriving rates at the floor in each devices were Descending life line 63%, Air cushion 22%, Escape chute 55% and Savingsun 100%. The success numbers of each models in each devices were one long leg splinted (1D, 1A, 2E and 3S), just intravenous fluid (3D, 1A, 2E and 3S), bedridden (0D, 0A, 0E and 3S). Mean durations (minutes, m) of each models in each devices were both long leg splinted (D 4.1m, A 3.4m, E 2.8m and S 3.1m), just intravenous fluid (D 3.2m, A 1.1m, E 1.4m and S 3.8m) and bedridden (did not in D, A, E and S 6.3m). CONCLUSION: "Savingsun" was very effective in almost kinds of patients in hospital fire disaster.

W115) Civil Unrest and Rioting: all scenario checklist : Efstratios Photiou¹, João Guimarães Garcia² : 1. Pronto Soccorso Ospedale Sant'Antonio, Dip.Interaz. Pronto Soccorso e Medicina d'Urgenza ULSS 16/Azienda Ospedaliera/Università di Padova, Padova, Italy. 2. Portuguese NHS/Navy, Portugal, Portugal.

Main concepts: May occur anywhere and at any occasion;
May very likely become a Mass Gathering (> 1000 people); May very likely become a very violent situation: angry mobs are dangerous and unpredictable. Reasons: Racial, Ethnic, Religious, Environmental, Political, Sports, Famine, Post-natural disaster, Other. Potentially any situation of lack of law enforcement. The "Musts": Creation of a Safety Protocol (consider Hazard Analysis, if already done); Figure out extension of interested area; Access/ Egress of interested area; Medical Facilities in the area; Volume (gross number of participants); Duration (if foreseeable)
Weather (breeze, rain, temperatures); Security; Other usable resources; Other events: looting of health premises (water, radio, phone, power, supplies lines breakdown); Staff shortage or exhaustion. Medical conditions to be expected: 1) As per Epidemiological Study: Violent: blast, burn, gunshot, blade, crowd crush and stampede, bruises, fractures, rape, conditions due to use of RCA; Psychological (fear, post-rape, children); Psychiatric; Normal: cardiac, metabolic, etc; Other: dehydration, hyper- or hypothermia, hunger, thirst, etc. 2) Other events: looting of health premises, electric power supply breakdown, water supply breakdown, phone lines breakdown, computer lines breakdown). Special note: RCA (Riot Control Agents): CN (Chloroacetophane), CS (Chlorobenzylidenemalonitrile), pepper spray. RCAs are heavier than air (pay close attention on people lying on the ground). They usually affect eyes, skin, respiratory tract; long exposure may cause death. Creation of a Medical Facility: Possibly in a relatively safe, well guarded area (not adjacent to rioting area); Possibly in high ground; Consider direction of breeze; Supplied with showers for decontamination, draining/water collection facility, latrines; Inwards- and outwards- routes available (guarded!); High protection is paramount for Medical Facility, patients and healthcare givers! Conclusion: Crises transform people and ways of thinking: learn and change!

W116) Spectrum of acute rhabdomyolysis in crush victims of the Bam earthquake : Saeed Safari¹, Iraj Najafi², Ali Abdalvand¹, Mostafa Hosseini², Ali Sharifi³ : 1. Shahid Beheshtie University of Medical

sciences, Imam Hosain Hospital, Department of Emergency Medicine, Tehran, Tehran, Iran. 2. Tehran University of Medical Sciences, Departments of Nephrology and Epidemiology and Biostatistics, Tehran, Tehran, Iran. 3. Isfahan University of Medical Sciences, Department of Surgery, Isfahan, Isfahan, Iran.

INTRODUCTION: In natural disasters such as earthquakes, based on severity of trauma, time under the rubble and quality/quantity of hydration we will be confronted with a spectrum of traumatic rhabdomyolysis, from almost normal, crush injury to crush syndrome patients. In the present study we evaluate victims of the Bam earthquake to show different stages of muscle trauma, from minor trauma with almost normal level of muscle enzyme to those with moderate trauma leading to crush injury and finally to advanced crush syndrome. **METHODS:** 25,514 killed, 30,000 injured and nearly 12,000 were referred to hospitals, of whom about 5000 were hospitalized. We had access to 4552 charts in 15 centers; among them 2962 cases had minimum relevant data to enter our study. A questionnaire consisting of clinical, biochemical and demographic items was designed and completed by our research team retrospectively.

RESULTS:

Clinical and laboratory data of 2962 hospitalized victims, with an average age of 28.4(SD14.2) years (range 1-90) were collected (40% female). 611 patients were affected with crush injury (20%). These patients were entrapped 2.2 hours longer than the others ($P<0.001$). Mean IV intake in the first 5 days was 3.6(SD2.6) liters for these patients in comparison to 2.5(SD1.4) liters for other patients ($P<0.001$). 200 cases showed complete features of crush syndrome, 200/2962(6%). Electrolyte imbalance was drastically increased in the worst patients with crush syndrome. **CONCLUSION:** In the approach to crushed patients of natural disasters, by paying attention to the wide spectrum of muscle damage and systemic problems, the stepwise management protocol based on severity of traumatic rhabdomyolysis is inevitable and warranted.

W117) Is water target or weapon of environmental terrorism? : Efstratios Photiou¹ : 1. Pronto Soccorso Ospedale Sant'Antonio, Dip.Interaz. Pronto Soccorso e Medicina d'Urgenza ULSS 16/Azienda Ospedaliera/Università di Padova, Padova, Italy.

Water deserves special mention, due its double nature as target and weapon. Concerns over the potential for water-related military and terrorist action are not new. In 1941, J.E.Hoover, FBI director, wrote that "water supply facilities offer a particularly vulnerable point of attack to the foreign agent . . . ". With the rise of terrorist activities, societies are increasingly concerned about disruptions to water systems. Water is vital in daily life and economic activity. The management of water resources and services involve political decision-making. Therefore, military and terrorist actions are of particular concern to security experts and water resources/systems managers. Water can become: 1)military weapon, 2)military target, 3)political mean, 4)terrorist target for violence, 5)a terrorist tool for coercion. Water resources and water systems (e.g.dams) are vulnerable to terrorist attack for several reasons: 1)vital to everyday life and economic activity, 2)prominent role in military history (terrorists often model strategies from military-type operations), 3)easily accessible. Water resources and systems can be viewed as both a tool for and target of terrorist actions:

1)flooding a particular area, 2)pressure loss to compromise firefighting abilities, 3)chlorine

containers (used in water treatment processes) manipulation, 4)toxic chemicals contamination at a pressure zone, 5)waterborne contamination by biological agents, Biological agents of high concern are: 1)smallpox, 2)anthrax, 3)botulinum toxin, 4)tularemia, 5)hemorrhagic fever viruses. Contaminants may go undetected,affect the health of water users, and cause severe health and economic damage. Rivers and water supply reservoirs are particularly vulnerable to contamination attacks. Key issues:1)Flood due to dam destruction:“search and rescue” activities, population displacement, housing, sanitation, water and food, security, 2)Water shortage:alternative fresh water supplies, quick repair of water systems, quality control, firefighting capacity maintenance, 3)Water contamination:alternative fresh water supplies, decontamination, water quality control, detection of toxic/pathogenous agent, related pathologies.

W118) Environmental Terrorism? Ecological Terrorism? Eco-Terrorism? : Efstratios Photiou¹ : 1. Pronto Soccorso Ospedale Sant'Antonio, Dip.Interaz. Pronto Soccorso e Medicina d'Urgenza ULSS 16/Azienda Ospedaliera/Università di Padova, Padova, Italy.

Terrorists' potential in a globalized world is enhanced. They may undertake extreme actions to achieve their goals. Environmental terrorism can have severe consequences; it can be carried out with conventional weapons, with substantial effects and low risks to perpetrators. Definitions: 1) Environmental terrorism, ecological, ecoterrorism: destruction...of the environment by states/groups/individuals to intimidate or coerce...can apply to a variety of crimes...intended to prevent or interfere with activities allegedly harmful to the environment(Encyclopædia Britannica); 2)..utilization of the forces of nature for hostile purposes..targeting of the environment(..deliberate contamination of water or agricultural resources), and the use of the environment as a conduit for destruction(..releasing chemical or biological weapons into the atmosphere..)(Schofield, Timothy. Boston Coll. Environmental Affairs Law Review, Spring 1999); 3)..violence(often symbolic) against innocent victims or property by an environmentally-oriented group for environmental-political reasons, or aimed at an audience beyond the target(FBI Domestic Terrorism Section); 4) An act that terrorizes other species and threatens the ecological systems..(Watson, Sea Shepherd Conservation Society); 5) Environmental destruction or the threat of...a) act or threat breaches national and/or international laws governing the disruption of the environment b) act or threat exhibits the fundamental characteristics of terrorism(i.e. the act or threat of violence has specific objectives, and the violence is aimed at a symbolic target...(D.M. Schwartz:Environmental Terrorism:Analyzing the Concept). Environmental terrorism is often referred to as "ecoterrorism." Differences: Environmental terrorism targets natural resources to affect populations. The environment has often been used as a weapon(environmental warfare) e.g. use of Agent Orange in Vietnam war. Eco-terrorism is practiced in defense of nature, by “anti-system” groups,using asymmetric warfare(unconventional tactics): energy utilities or equipment sabotage,biological agents deployment, “monkeywrenching” (environmentally harmless modification of natural resources) etc.

W119) Assessment of Functional Maneuvers in Hospital Disaster Planning : MEHRDad Esmaeliyan¹, Mohamad Kalantari meibodi¹, Ali Shahrani¹, Shahrnam Alamdari¹, Hamid Kariman¹ : 1. emergency, sbmu, Tehran, tehran, Iran.

INTRODUCTION: Iran is the tenth most common country in the world and the fourth most common country in Asia that calamities occur in. Tehran, the capital, is the striking heart of the country disaster planning. Imam Hossain Hospital which covers the eastern area of Tehran and the cities around, is one of the Tehran`s strategic medical centers. **METHODS:** In this thesis, in addition to assessing the conclusions acquired from the classic maneuver of the hospital, the basic design of the maneuver, the design manner and scenario, triage protocol, several medical protocols and how to improve the executive several steps and foundations, is being concluded and discussed; and also how to improve conditions based on existing conditions is stated. **RESULTS:** In the simulated maneuver, on the ground triage, on the basis of their education and assist of START triage method (Simple Triage And Rapid Treatment) the nurse group separated the patients and the results were as follows: Total amount of correct triage: 64.4%; Correct amount of green triage: 62.5%; Correct amount of yellow triage: 73.3%; Correct amount of red triage: 58.3%; Correct amount of black triage: 75%. On the basis of the maneuver, the lack of existence of a unique executive and medical protocol and the lack of correct training of the various hospital personnel was one of the basic reasons of the errors in the background of triage, diagnosis, treatment and the official-practical operation. **CONCLUSION:** The result of the hospital disaster planning showed that the lack of a unique protocol in the executive and medical planning causes confusion in different divisions and lack of ability to make coordination between them during the force major. So it seems that providing a medical-executive protocol and training of the different sections involved in hospital disaster planning and periodical maneuvers (to assess the strength and weakness points) will lead to improvement of the operation during the disaster.

W120) The demography of helicopter-transported patients to Imam Khmeiny Hospital : Parisa Mohamadi¹, Mohamad Klantari meibodi¹, Shahram Alamdari¹, Hamid Kariman¹, Afshin Amini¹, Hamid Hatamabadi¹, Mostsfa Alavi moghadam¹, Ali Shahrami¹ : 1. emergency, sbmu, Tehran, tehran, Iran.

INTRODUCTION: Within the past century, industrialized nations underwent an epidemiologic transition and trauma became the leading cause of years of potential life lost consuming large amounts of health care resources. In Africa and some parts of Asia, trauma is now a major cause of death and disability. Because there has been much less research efforts in the field of trauma than in other conditions, trauma has been termed the neglected disease of modern society. This phrase may also apply to the status of trauma in most developing nations where expenditure on published health programs and research on trauma are minuscule. Since the beginning of the month of Khordad in 1379, an air ambulance with the purpose of rapidly transporting severely injured patients, has been established. Because this form of transportation involves great cost to the government we decides to evaluate the service to patients in the hospital. We hope that this research can determine some aspects of the epidemiology of trauma and quality of urgency service and be a basis for more comprehensive studies. **METHODS:** In this study we describe the demography of transported patients via medicopter to Imam Khmeiny hospital from the beginning of this service. **RESULTS:** In 158 cases, the male to female ratio was 2/8 and the most prevalent age of injury was 30. 92% of the patients were injured in accidents, which demonstrates the necessity of better prevention and executive

programs in the traffic field. The most prevalent injured site was extremity, followed by head & neck. The most severe injuries were seen in patients with injury to the head & neck, and thorax. The mean of golden time standard deviation was 23.5. Most patients were treated by general surgery and orthopedic services, showing the necessity of more attentions in these services. Outcomes of patients: most of the cases left the hospital with their own will. This shows the dissatisfaction of patients about services.

W121) Hospital and treatment centers' safety during disaster : Mohamad Kalantari meibodi¹, A. Feyzi layin¹, H. Ghonche¹, Abdollah Bahrami¹, Manije Kalantari meibodi¹ : 1. emergency, medicin mashad, Mashad, tehran, Iran.

BACKGROUND: Considering the importance of emergency medical practice as a therapeutic specialty both of medical sciences and management science in, Iran Mashad, Hasheminejad Hospital and taking into account our country's being the fourth Asian country it's logical to think about increasing hospital safety before a disaster. **METHODS:** First we define a clinical crisis as a situation in which a hospital is not able to cope based on its normal daily capacity. The current study is conducted based on a formerly prepared procedure used in Tehran's Hospitals. The methods are then modified as dictated by climatic, cultural and Mashad (Hasheminejad Hospital, Mashad, Iran) depends Mashhad Medical University. Necessary training based on this procedure was provided to the staff and the program was followed to the practice phase and a maneuver was then conducted. **DISCUSSION:** The program should be prepared in such a way to constitute immediate establishment of a crisis committee comprised of: 1) head of the hospital who should direct the operation and make contacts to other organization such as fire department and the red crescent and 115 Emergency services, 2) Para clinic unit (including laboratory, Radiology and blood bank), 3) nursing unit (triage, coordination), 4) guarding unit and sentinels, 5) dispatching and discharging unit, 6) psychiatric and social work unit, 7) and others. Each unit is headed by a director for whom 3 surrogates should be designated who would immediately take the director's place. The operation would begin by an announcement by the head of the crisis management headquarters of the university to the head of the hospital as the field commander. Instructions are then given by the latter to unit directors who then muster their staff to execute the predefined tasks.

W122) Hospital Disaster Planning : Hossein Alimohammadi¹, Mohamad Kalantari meibodi¹, Afshin Amini¹, Hamid Kariman¹, Hamid Hatamabadia¹, Manije Kalantari meibodi¹, Shahram Alamdari¹, Ali Shahrami¹ : 1. emergency, shahid beheshti, Tehran, tehran, Iran.

INTRODUCTION: Considering the importance of emergency medical practice as a therapeutic specialty both of medical and management science and taking into account our country's being the fourth Asian country in regard to frequency of natural disasters, also considering that our country is located in an earthquake prone area, it's logical to think and plan to prepare about disaster management. **METHODS:** First we defined a clinical crisis as a situation in which a hospital is not able to cope based on it normal daily capacity and may result in considerable number of deaths and injuries. In the current study a formerly prepared procedure used in American and European hospitals is taken as the base on which the study is conducted. The

modes are then modified as dictated by climatic, cultural and clinical conditions of Iran. An aerial map of Iman Hossein Hospital is used to depict the positions of field units and command centers both when it's partially dilapidated. Necessary training based on this procedure was provided to the staff and maneuver was then conducted. RESULTS: The program should be prepared with immediate establishment of a crisis committee comprised of:

1) head of the hospital who should direct the operation and make contacts to other organization
2) Paraclinic unit, 3) nursing unit(triage), 4) guarding unit, 5) dispatching and discharging unit,
6) psychiatric unit, 7) refrigeration unit, 8) emergency evacuation unit, 9) installations and maintenance unit, 10) logistics unit, 11) communication unit, 12) public relations unit, 13) reception unit, 14) bio Nucleuchemical unit, 15) specialized units. Each unit is headed by a director for whom 3 surrogates should be designated who would immediately take the director's place when necessary. The operation would begin by an announcement by the head of the crisis management headquarters of the university to the head of the hospital as the field commander. Instructions are then given by the latter to unit directors who then muster their staff to execute the predefined tasks. After completion of assigned tasks and receiving confirmation by higher positions in the chain of command the mission would be considered accomplished.

W123) Utility of Tetanus Quick Stick as an applicable and cost-effective test in assessment of immunity status in the emergency department : Hamidreza Hatamabadi¹, Ali Abdalvand¹, Saeed Safari¹, Ali Shahrami¹, Hossein Alimohammadi¹, Ali Arhami¹, Hamid Kariman¹, Mostafa Hosseini² : 1. Department of Emergency Medicine, Imam Hosain Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran. 2. Department of Epidemiology and Biostatistics, Tehran University of Medical Sciences, Tehran, Iran.

INTRODUCTION: Current protocol for immunization against tetanus in the emergency department(ED) is a challenging decision mostly due to the fact that it is based on two variables; the vaccination status of the patient and nature of the wound. To solve this problem Tetanus Quick Stick (TQS), an immunochromatographic dipstick test, was developed to determine the tetanus immunity of the patients. **METHODS:** Blood samples were collected from 200 patients who presented to the ED of Imam Hossain Hospital (Tehran, Iran) with wounds. Information including demographic information, tetanus immunization status, wound description and the preventive measure taken by the emergency physician (EP) was gathered by a pre-educated nurse. The EP and the patients were blinded to the study. The blood samples were sent to laboratory to have their serum separated. Then TQS (Nephrotek, France) test and ELISA (Tetanus ELISA IgG Testkit, Genzyme Virotech GmbH, Germany) were performed as the standard diagnostic test by an EP and a lab technician respectively. The data were analyzed using STATA software. **RESULTS:** The analysis of the data shows that the EP failed to follow the protocol guidelines for tetanus prophylaxis in 84 cases (42%), 45 doses of TIg and 30 doses of vaccine were administered to patients without indication, and conversely 23 doses of vaccine and 11 doses of TIg were missed that should have been administered. 99 (49.5%) patients did not know their vaccination status clearly. The result of TQS test for patients with dirty wounds (30%) who did not remember their vaccination history was positive for half of them (30 patients). We also had 39 (19.5%) patients with clean, minor wounds who were not sure about their tetanus vaccination history, 25 of them had positive TQS tests.

CONCLUSION: This study revealed TQS test to be appropriate for use in the ED, especially in the evaluation of patients who do not remember or can not give their tetanus immunization history. It is also a cost-effective test regarding the price of one dose of TIg and tetanus vaccine in comparison to a TQS.

	Sensitivity	Specificity	Negative predictive value	Positive predictive value
TQS test	88.1%	97.6%	99.3%	66.1%

W124) Introducing an Innovative Pediatric Trauma Prevention Program in Florence, Italy : Francesca Bronzini¹, Robert Freitas², Marilyn Howell³, Meaghan Cussen², Kevin Ban¹, Robert Freitas² : 1. Trauma Center-Anna Meyer Pediatric Hospital, Florence, Italy. 2. Harvard Medical Faculty Physicians, Boston, MA, USA. 3. Harvard Medical School, Boston, MA, USA.

BACKGROUND: Trauma is responsible for 40% of childhood mortality. With the opening in Florence of the first pediatric trauma center (PTC) in Italy, we embarked on an injury prevention program since the role of a PTC is to both treat and prevent trauma. One venue for educating children about trauma prevention is in schools; unfortunately, PTC staff have limited time to travel to schools and educate students. As a requirement for graduation, one high school in Florence requires students to perform community service. To fulfill this requirement, 15 students expressed interest in being trained as Junior Trauma Educators (JTEs) and to teach injury prevention to younger students. The average age of JTEs was 17. JTEs attended a workshop explaining basic anatomy and physiology, were taught the importance of using helmets and seatbelts, and learned how to present information to youngsters. Of those trained, 4 students were selected to give the first presentation to 28 children who ranged from 7 to 9 years of age. At the end of the 1-hour program, bicycle safety information appropriate for both students and parents was distributed. We are continuing this novel program, and have expanded it beyond the city of Florence; we expect to teach over 200 elementary age students this year. **Key Lessons Learned:** Regular interaction between JTEs, PTC staff, and teachers is the key to success given the competing interests that high school students face. For example, we experienced a lapse in communication between PTC staff and the JTEs during a 3-month period in which we lost 4 JTE's to other activities. Also, we now focus on training 11th year JTEs (rather than both 11th and 12th year students) since these JTEs will provide 2 years of teaching (rather than just one). **DISCUSSION:** We have demonstrated that high school students may be effective instructors in an injury prevention program. In our model, we also exploit a multiplier effect in that we were also teaching the high school students about injury prevention. We plan to assess the long-range results of our innovation, addressing whether unsafe risk-taking behaviors change over time.

W125) Prospective Validation of Multiple Presentations as a Risk Factor for Mortality : Drew B. Richardson¹ : 1. Emergency Department, Australian National University, Garran, ACT, Australia.

INTRODUCTION: Retrospective study has shown that multiple presentation status is a risk factor for death by 1 year. This study aimed to prospectively validate this relationship for

deaths by 14 days after presentation.

METHODS: 20 week prospective descriptive study in mixed tertiary ED with annual 52000 presentations draining a well defined population. Each presentation with recorded signs of life was classified according to the number of presentations by that patient in the preceding 365 days. Death was assessed at 14 days on the basis of hospital and public (newspaper) records. The primary hypothesis was that death would be a more frequent consequence after visits with three presentations recorded in the last 12 months.

RESULTS: Of 20481 presentations, 149 resulted in death (0.73%, 95%CI 0.61-0.85). Of 675 with three in the past year, 11 resulted in death (1.63%, odds ratio compared to zero previous visits 2.5, 95%CI 1.4-4.7). Despite small subgroup numbers, the effect was seen across age groups.

CONCLUSION: Multiple presentation status is prospectively validated as a risk factor for death early following ED presentation. This effect is not due simply to higher frequency of presentation in the elderly.

W126) The Effect of Tourist Influx on Emergency Health Services in the Maltese Islands : Anna Spiteri¹ : 1. Emergency Department, Mater Dei Hospital, Kappara, Malta.

BACKGROUND: Modern Maltese economy depends heavily on tourism, foreign trade and manufacturing. Tourist arrivals have increased steadily since the mid-1980s and over the past 5 years the number of arrivals has been augmented by the arrival of massive numbers of illegal immigrants from third world countries. This influx of tourists has had an effect on the provision of emergency health services in Malta. **CASE and DISCUSSION:** This poster presentation will focus on the positive and negative effects resulting from foreign arrivals on the Emergency Departments in the Maltese islands.

W127) New cancer diagnosis in the emergency department: the experience in the Tor Vergata Polyclinic of Rome : Sabina Guarino¹, Lara Minetola¹, Jacopo Legramante¹, Roberta Tamburrini¹, Germano Giovagnoli¹, Mariacarla Gallù¹, Nicola Di Lecce¹, Antonella Brandi¹, Alberto Galante¹ : 1. emergency medicine, Policlinico Tor Vergata, Rome, rome, Italy.

INTRODUCTION: The aim of this work is to describe and monitor the phenomenon of new cancer diagnosis in the Emergency Department of Rome's "Tor Vergata" Polyclinic, gathering people of South-East area of the city. **METHODS:** We analysed data of 332 patients evaluated in the Emergency Department of our Polyclinic from January 2005 up to December 2007 and for which a new diagnosis of cancer was formulated. We included twenty major cancer sites. We started from the first diagnosis shown in RAD card, thus extracting, from the Polyclinic's data base, all the new cases of malignant tumour observed in the analysed period. **RESULTS:** Gastrointestinal and lung cancers were the most commonly represented (76.8%) disorder in our group of patients, mostly belonging to the group 60-80 years old, with a highest prevalence of males in 2005 and 2006. Hospital length-of-stay was longer for those who underwent medical therapy, than operation. 78% of the patients returned to home, while 12% died in hospital. **CONCLUSION:** The cancer pattern observed was similar to data shown in the whole world: cancer occurs especially in elderly people, with survival decreasing with age. Our study

emphasizes that the Emergency Department can be considered a good instrument for evaluating the effectiveness of the screening practices.

W128) END TIDAL CARBON DIOXIDE: A PREDICTIVE TOOL FOR EXCLUDING METABOLIC DISTURBANCES IN EMERGENCY SETTINGS : Mutlu Kartal¹, Oktay Eray¹, Stephan Rinnert², Erkan Goksu¹, Firat Bektas¹, Soner Isik¹ : 1. Akdeniz University Hospital Department of Emergency Medicine, Antalya, Turkey. 2. SUNY Downstate / Kings County Hospital Department of Emergency Medicine, New York, NY, USA.

INTRODUCTION: The purpose of this study is to examine the relation between end-tidal carbon dioxide (ETCO₂) measurement and bicarbonate level reflecting the patient's metabolic status. **METHODS:** This prospective cross-sectional study was carried out over a 3-month period in a tertiary care university hospital emergency department with an annual census of 75,000 visits. During the study period, every emergency room patient requiring arterial blood gas analysis (ABG) for any medical indication had a simultaneous ETCO₂ measurement using a Medlab Cap 10 ® side stream capnograph. The demographics and clinical outcomes of the patients were recorded. **RESULTS:** Of 399 eligible patients, 240 with possible metabolic disturbance were enrolled into the study. There was a statistically significant correlation between the value of ETCO₂ and bicarbonate (HCO₃) levels (r=0.506). The mean ETCO₂ levels were statistically significantly lower in patients who died (26.5±7.2, 95% CI: 24.2-28.6 vs 30±7.5, 95% CI: 29-31; p=0.007) and who had low bicarbonate levels (25.7±6.7, 95% CI: 24.3-27.1 vs 31.6±7.1, 95% CI: 30.4-32.8; p=0.000). The value of ETCO₂ measurement in order to detect low bicarbonate level was found to be significant. The area under the ROC curve was 0.734, the (+) LR for ETCO₂ ≥25 was 2.7, the (-) LR for ETCO₂ <26 was 0.05. **CONCLUSION:** ETCO₂ values correlate well with HCO₃ levels and thus might relate to mortality and metabolic acidosis. Therefore, side stream capnograph can be used as a noninvasive diagnostic tool for particularly ruling out suspected metabolic disturbance in the ED.

W129) Emergency physicians are better in detecting PE than internal medicine physicians : Ulf Martin Schilling¹ : 1. Accidents and emergencies, Linköpings university hospital, Linköping, Sweden.

INTRODUCTION: Detecting pulmonary embolism (PE) still is one of the problems for the emergency physician (EP). Emergency medicine (EM) in Sweden is a developing field of medicine. Most of the EPs are still residents under training and the guards are shared by EP and physicians working at the different wards. **Objective:** To confirm that EPs might be better in detecting PE, a retrospective cohort-study was performed. **METHODS:** During the periods of March till May 2007 and 2008 the findings in all patients undergoing pulmonary CT at our emergency department (ED) were reviewed. The investigations were attributed to EP or internal medicine physician (IP). Negative and positive findings were evaluated and adjusted to the number of medical patients treated by the respective group. Statistical analysis was performed by the Student's T-test, probability levels of 5% were accepted as significant. **RESULTS:** In 2007, a total of 2847 patients attended for medical problems, 576 of which were treated by EPs (20.23%). The rest of the patients (79.77%) were treated by IPs. In 2008, 2408

patients attended for medical problems and 625 (25.95%) were attended by EPs. EPs ordered a total of 34 pulmonary CT in 2007 and 35 in 2008. 17.64% (2007) and 22.86% (2008) of these resulted in confirmation of the diagnosis of PE. IPs ordered 77 (2007) and 64 (2008) pulmonary CT, resulting in 12.98% (2007) and 10.93% (2008) positive findings. For the total of patients attended, EPs ordered pulmonary CT for 5.9% (2007) vs 5.6% (2008), while IP performed CT-scans in 3.39% (2007) vs 3.59% (2008)(p=0.0108). This means that EPs have a higher index of suspicion for the diagnosis of PE (1.74 (2007) vs 1.56 (2008) vs IP). For the total of patients attended at the ED, this resulted in positive findings for pulmonary CT in 1.04% (2007)/1.28% (2008) for the EP and in 0.43% (2007)/0.39% (2008) for the IP (p<0.01). Thus, the odds-ratio to have a positive finding on a pulmonary CT by an EP compared to an IP was 2.43 (2007) vs 3.26 (2008). CONCLUSION: EPs have a higher index of suspicion than IPs and are more accurate in detecting PE at the ED.

Rate of positive findings at the CT-scan

17.64	12.98
22.86	10.93

Left: Percentage of positive CT-scans ordered by emergency residents. Right: Percentage of positive CT-scans ordered by internal medicine physicians.

Index of suspicion

5.9	3.39
5.6	3.59

Left: Percentage of patients treated by emergency physicians for whom a CT-scan was ordered by emergency physicians 2007 and 2008. Right: Percentage of patients treated by internal medicine physicians undergoing a CT-scan 2007 and 2008. P=0.0108

W130) An Atypical Presentation of Pulmonary Embolus in A Patient With No Risk Factors : Kevin Washington¹, Lisa Moreno-Walton¹ : 1. Emergency Medicine, Louisiana State University Health Sciences Center, New Orleans, LA, USA.

CASE: A 33 year old male presenting to the Emergency Department with 2 episodes of substernal chest pain, shortness of breath and pain with deep inspiration on the morning of admission, now resolved. Symptoms began when, upon awakening, he took 3 steps and resolved after 2 minutes of rest. They recurred when he turned on the bathroom faucet and again resolved with 2 minutes rest. He never previously had chest pains. Past Medical is negative; no medications, tobacco or illicit. Family History: Diabetes, hypertension, coronary artery disease. Review of Systems is negative for headaches or visual changes, fever, chills, cough, weight loss, pain to back or shoulders, calf pain or swelling, nausea, vomiting, diarrhea, claudication, varicose veins, weakness, parasthesias. On physical: Patient was a well nourished, well developed male in no apparent distress. Vitals: Afebrile with heart rate 103, respirations 20, blood pressure 126/78. HEENT: Normocephalic and atraumatic, pupils equal, round and

reactive with extra ocular muscles intact. Lungs:Clear to auscultation without rales, rhonchi or wheezes. Complains of discomfort with inspiration. CVS:Tachycardic with normal rhythm, no murmurs, gallops, rubs or clicks. Abdomen:Soft, non-tender, non-distended, no pulsatile masses, no organomegaly. Extremities:2+ pulses, no swelling or tenderness or deformity. Neuro: normal examination of the cranial nerves, sensation and motor function. Labs:WBC 6.4 with 44 segs,2 bands,41 lymphs,6 monos,3 eos;H/H 16.7/50.5; Chemistry 20 and coagulation studies within normal limits; Cardiac enzymes negative. EKG:(We will show an EKG that very clearly demonstrates the S1Q3T3 pattern) CXR:No acute disease. Chest CT:small filling defect identified at the right main central pulmonary artery suspicious for pulmonary embolus(will be shown). DISCUSSION: Symptoms that worry the patient warrant our full investigation. In the Emergency Department, we must rule out by history and clinical exam and/or appropriate investigations not only the most common diagnosis for the symptom picture, but also the worst possible diagnosis.

W131) URTICARIA AND ANGIOEDEMA: PROFILE OF PATIENTS IN THE EMERGENCY DEPARTMENT AND FACTORS RELATED TO REVISITS : Yeliz Berk¹, Oktay Eray², Ozlem Yigit³, Neslihan Korkmaz⁴, Erkan Alpsyoy⁵ : 1. Akdeniz University Hospital Emergency Department, Antalya, Turkey. 2. Akdeniz University Hospital Emergency Department, Antalya, Turkey. 3. Akdeniz University Hospital Emergency Department, Antalya, Turkey. 4. Akdeniz University Hospital Emergency Department, Antalya, Turkey. 5. Akdeniz University Hospital Dermatology Department, Antalya, Turkey.

INTRODUCTION: The profile of acute urticaria patient in Turkish people and the recurrent symptoms related to urticaria in spite of emergency treatment are not clearly defined. The definition of the patient population will improve the clinical approach for the urticaria patient. The aim of this study is: to define the demographic features of urticaria patients visiting the emergency department and to find the factors which can affect emergency department revisits due to urticaria symptoms. **METHODS:** The patients aged 16 and older, which were coded as urticaria (L50) according to the ICD-10 codes in Akdeniz University Emergency Department database, between 01/01/2001 - 30/04/2008 were enrolled in the study. Revisits in the following five days with the same complaints were determined and the factors which can affect the recurrent visits were examined. **RESULTS:** The mean age of 3813 urticaria patients was 40.2±15.8, 2304 were female, 2940 were triaged as non urgent and 3787 were discharged from the emergency department. There was no significant difference between the seasons of the year. The 78 patients with recurrent visits were explored and there was not any significant difference between the sex, urticaria or allergy history in the past, receiving H1 and H2 receptor blockers together or receiving two different H1 receptor blockers, the season of the year, comorbid diseases or medicines for chronic illness. The presence of a possible reason for the urticaria symptoms and chronic urticaria diagnosis were found to be more common in the revisit group. **CONCLUSION:** Urticaria is common in women and at age 40. The history of allergy or urticaria, comorbid diseases, chronic medications and the season of the year do not affect the recurrence of emergency department visits. The presence of a possible reason for urticaria symptoms and the diagnosis of chronic urticaria were found to be high in the recurrent visit group.

W133) Post-Dural Puncture Headache and Treatment with Epidural Blood Patch : M. Termizi Hassan¹,

John Ryan¹, Ingrid Browne¹ : 1. St. Vincent University Hospital, Dublin, Dublin, Ireland.

BACKGROUND: Post-Dural Puncture Headache (PDPH) is one of the commonest complications following diagnostic lumbar puncture. It occurs due to constant leaking of cerebrospinal fluid (CSF) through a hole on the dura which leads to low CSF volume and pressure, causing a downward shift of the brain and subsequent traction of its pain sensitive structures. PDPH is characterized by headache of varying intensity that occurs after lumbar puncture, which is postural in nature. It is most commonly felt in the fronto-occipital area and associated with neck pain and stiffness, backache, tinnitus, diplopia, nausea and vomiting. PDPH can be very severe and traumatic to patients who are already ill when they present to Emergency Department. In the majority of cases, these symptoms respond to conservative management including simple analgesia, anti-emetics, opiates, caffeine and hydration. However, in a small percentage of patients who do not respond to the treatment, they will require epidural blood patch which is shown to be effective and safe. Incidence of PDPH following diagnostic lumbar puncture ranges from 15 to 30 percent. Multiple factors can reduce the incidence of PDPH including the use of smaller gauge spinal needles, newer design non-cutting needles, orientation of cutting needle parallel to dural fibers and re-insertion of stylet before removal of spinal needles. These practice changes are widespread in anaesthesia, which contributes to lower incidences of PDPH of less than 10 percent. However, practice outside the anaesthetic specialty has been slower to change and continue to use cutting needles despite strong recommendation (type A) from American Academy of Neurology in 2000.

CASE: We report a case of PDPH occurring after a diagnostic lumbar puncture using standard cutting spinal needle and subsequent treatment with epidural blood patch in a patient presenting with sudden onset of severe headache to our Emergency Department.

DISCUSSION: There is no doubt that the use of non-cutting spinal needle will increase the cost of lumbar puncture but this cost is minimal compared to cost of treatment, time and productivity lost due to debilitating nature of PDPH.

W134) The preventable disability of ischemic stroke: pilot study : Ju Ok Park¹, Sang Do Shin², Chu Hyun Kim³, Kyoung Jun Song⁴ : 1. Department of Emergency Medicine Jeju National University College of Medicine, Jeju, Korea, South. 2. Department of Emergency Medicine Seoul National University College of Medicine, Seoul, Korea, South. 3. Department of Emergency Medicine Incheon Medical Center, Incheon, Korea, South. 4. Department of Emergency Medicine Seoul National University, Boramae Medical Center, Seoul, Korea, South.

INTRODUCTION: Thrombolysis in proper time can save the penumbra in the brain and reduce the possible disability. However only a small number of patients present to the ED in 3~6 hr. If they have visit the ED in proper time and are treated with thrombolytic agent, their outcome could be improved. This study was conducted to estimate the proportion of patient with preventable disability of ischemic stroke.

METHODS: Data was collected prospectively from the patients who visited the ED and were diagnosed with ischemic stroke in one training hospital. Data include demographic findings, prehospital time, prehospital care, ED care, disability level by mRS (modified Rankin Scale). Preventable disability was defined by the following criteria: pre-stroke mRS=1, post-stroke mRS>2, prehospital time>6hr, no diabetes,

no cardiac disease, no previous stroke and no thrombolysis. RESULTS: From Nov. 2007 to May 2009, the total number of stroke patients who were pre-stroke mRS=1 was 70. The mean age was 70+/-12.3 years old. Among them 38 (54.3%) were male and 53 (75.7%) became disabled. The number of patients who met the criteria of preventable disability was 11 (15.7% of total and 26.2% of patients without thrombolysis). CONCLUSION: If the prehospital time could be reduced and thrombolysis could be done actively, the proportion of preventable disability would be lowered.

W135) Hypoglycemia - The Portuguese Reality : Patricia Freitas¹, Maria Bravo¹, Nuno Sá¹, Filipe Garcia¹, Ana Lufinha¹, Nuno Catorze¹ : 1. Prehospital Emergency Medical Service - VMER, Hospital de São Francisco Xavier, Lisbon, Portugal.

INTRODUCTION: Hypoglycemia is a metabolic disease that is increasing in modern societies. The diabetic population has a higher prevalence in the emergency department that can be overcome with education and existence of pre-hospital teams. Objectives: The hypoglycemia prevalence in the diabetic population, easily escapes the emergency department, in contrast to other acute diabetes mellitus (DM) complications, but there is no study confirming this hypothesis and its social-economic impact. METHODS: Using the database of our Prehospital Emergency Medical Service (VMER), joined with the population of the area of influence of that VMER, we aim to characterize hypoglycemia episodes in number and severity, and provide epidemiological data for 2007. RESULTS: For 2007 the estimated population for the area of interest was 653,240. According to the International Diabetes Federation records, diabetes mellitus affects 8.2% of the population. Of the 2,742 patients assisted by our VMER, 290 (10.6%) presented with hypoglycemia as the primary diagnosis. Of these, 184 did not require hospital transfer. In the target group, 53.1% were female, mean age 65 years. CONCLUSIONS: For the estimated 53,566 patients that belong to the area of interest, there were 290 (0.54%) cases/year of hypoglycemia treated by this VMER. Of these, 63.4% did not require hospital treatment, which seems to confirm that this disease is underestimated in the emergency department. The socio-economic importance of this fact has to be further studied, but it seems to be a major health concern that should be clarified.

W136) Euglycemic Diabetic Ketoacidosis: A Rare Diabetic Emergency : David A. Wald¹ : 1. Emergency Medicine, Temple University School of Medicine, Philadelphia, PA, USA.

BACKGROUND: Our objective is to review the entity of euglycemic diabetic ketoacidosis (DKA). CASE: A 27 year old female presented to the emergency department with nausea, vomiting, and generalized abdominal pain for 1 day. Past medical history included; insulin dependent diabetes, anemia, and hypercholesterolemia. Initial vital signs were; temperature 98.1 F, heart rate 148 bpm, respiratory 24 per minute, and blood pressure 109/69 mmHg. Physical examination identified dry mucous membranes, tachycardia, clear lung fields, a mildly tender abdomen without guarding, and a fruity breath odor. Bedside urinalysis showed large ketones. Her basic metabolic profile identified; serum glucose of 187mg/dL, sodium 146 mEq/L, potassium 5.3 mEq/L, chloride 101 mEq/L, bicarbonate of 18 mEq/L, blood urea nitrogen 28 mg/dL, creatinine 1.9 mg/dL, and an anion gap of 27. A venous blood gas reported

a serum pH of 7.30. She was initially resuscitated with intravenous normal saline (NS). She was then switched to 5% dextrose in NS and started on a low dose continuous infusion of regular insulin. Over the next 24 hours, her bicarbonate level and anion gap normalized. She was then converted back to her preadmission insulin regimen and discharged without further incident. **DISCUSSION:** DKA is a relatively common and potentially life threatening complication of diabetes. Traditional definitions of DKA include a pH < 7.30, serum glucose >250 mg/dL, and serum bicarbonate <15 mEq/L. True euglycemic DKA is rare and has been defined as a serum glucose <200 mg/dL. In practice, other causes of euglycemic ketoacidosis occur in the non-diabetic population, primarily alcoholic ketoacidosis (AKA) and starvation ketosis (SK). A concise medical history should allow for differentiation between AKA and euglycemic DKA. With SK, the difference may not be as apparent as starvation may be a component of euglycemic DKA. Acid-base status should still be evaluated in select diabetic patients in the absence of hyperglycemia. In DKA, the goal remains to correct intravascular volume depletion and electrolyte abnormalities, reestablish carbohydrate metabolism, and identify and treat precipitating causes.

W138) Thread Space study: Diagnosing venous thromboembolism (VTE) using respiratory dead space and D-dimer : Danny Sfeir¹, Ted Tabor², Kerstin Hogg¹ : 1. The University of Manchester, Manchester, United Kingdom. 2. Philips Medical Systems - Respironics, Paris, France.

INTRODUCTION: Currently, deep vein thrombosis (DVT) and pulmonary embolism (PE) investigation is costly and time consuming to hospital resources and the patient. Patients can experience lengthy waits for invasive procedures. Our previous research has suggested that combined dead space and D-dimer could safely exclude PE in patients with pleuritic chest pain. This study aimed to assess a non-invasive bedside rule out strategy by measuring respiratory dead space combined with D-dimer in a more generalised population. **METHODS:** This was a prospective diagnostic study set in a large city centre hospital, Salford Royal Foundation Trust. Between May 11th 2009 and June 22nd 2009 any patient investigated in the emergency department for DVT or in the hospital for PE was approached for consent. Exclusion criteria were: lack of capacity or age under 16. Dead space was calculated using the Bohr equation using end tidal CO₂ and mixed expired CO₂ values (as recorded by CO₂SMO+ Novamatrix). All patients had D-dimer testing (IL-test D-dimer). A positive result required both a dead space fraction >0.37 and a D-dimer > 278ng/ml. Reference standard diagnostic algorithms were used to confirm a positive or negative result for PE or DVT. DVT was excluded by a low/moderate modified Wells' score combined with a normal D-dimer and PE was excluded by a low modified Wells' score and normal D-dimer. Those who remained followed evidence based reference standard diagnostic imaging. All patients are followed for three months. **RESULTS:** 166 patients presented with possible VTE during the above time period. 20 patients were not approached, 16 declined to participate and 10 were excluded, leaving 120 recruited. A combined positive dead space and D-dimer for all VTE gave a sensitivity of 61.1% (95% CI, 38.6-79.7%), and a specificity of 49.5% (95% CI, 39.4-59.6%). The same combination for PE alone gave a sensitivity of 50% (95% CI, 0.2-0.8%), and a specificity of 54.3% (95% CI, 38.2-69.5%). **CONCLUSIONS:** Respiratory dead space analysis combined with a D-dimer testing does not aid the diagnosis of VTE in this general hospital population.

Table 1

	VTE +ve	VTE -ve
Combined dead space and D-dimer +ve	11	46
Combined dead space and D-dimer -ve	7	45

Table 2

	PE +ve	PE -ve
Combined dead space and D-dimer +ve	3	16
Combined dead space and D-dimer -ve	3	19

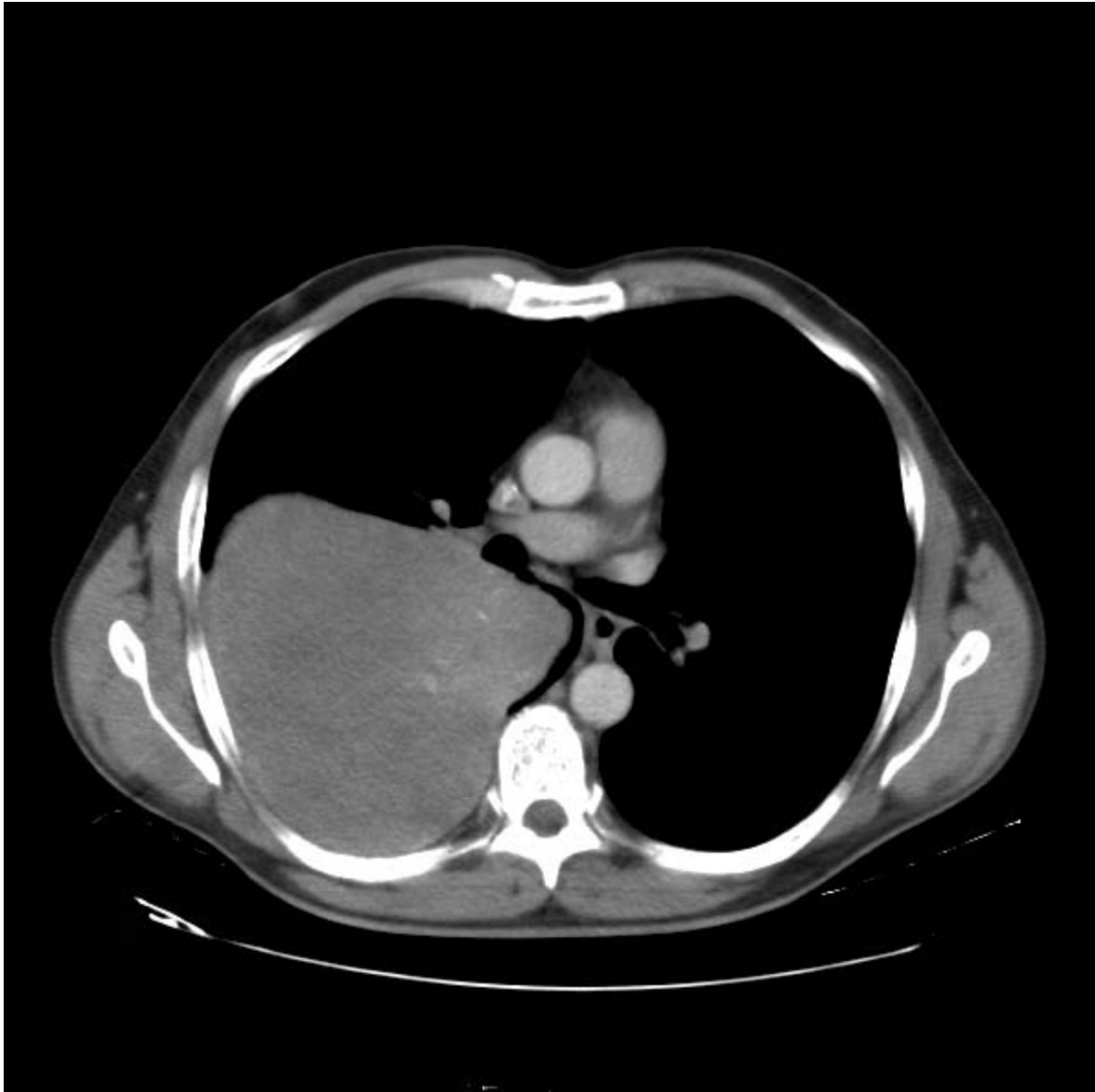
W139) Comparison of i-STAT® Point-of-care Analyser against Standard Laboratory Blood Gas Analyzer in an Emergency Department : M. Termizi Hassan¹, Dick Drew², Kumud Paratian² : 1. Anaesthesiology Department, St. Vincent Hospital, Dublin 4, Ireland. 2. St Michael Hospital, Dun Laoghaire, County Dublin, Ireland.

INTRODUCTION: Arterial blood gas is frequently carried out in emergency departments. Increasingly, this test is performed as a point-of-care test in emergency departments and critical care areas. It provides a fast diagnosis in an emergency setting that promptly leads to treatment of ill patients. Ideally the analyser should be within the emergency department therefore delay can be avoided. In a small emergency department such as St. Michael's Hospital, we are looking for a small, portable device where samples can be analysed promptly on patient arrival to the department. The objective of this study is to review a new handheld i-STAT® blood gas analyser against the standard laboratory gas analyser Roche OMNI®. **METHODS:** Blood gases were taken from patients who required blood gas analysis as part of their investigation after presenting to the emergency department at St. Michael's Hospital, Ireland, within a 5 week period from October 2008 to November 2008. 22 patients were included in this study. PH, PO₂ and PCO₂ were measured and the results from i-STAT® were compared with standard laboratory gas analyser Roche OMNI®. **RESULTS:** There was no significant difference in the PH value between the two analysers. However, the PO₂ and PCO₂ showed significant differences (p=0.00, 95%CI=0.69, 1.61, p=0.000, 95%CI=0.12, 0.29) between the standard laboratory gas analyser and the new i-STAT® Analyser. **CONCLUSIONS:** Although it is ideal and important to have a blood gas analyser in the department itself where blood gases can be analysed quickly, accuracy of results and patient safety should be the priority. This study showed that the differences in PH level were small and insignificant. However, there were significant differences in PO₂ and PCO₂ values. These differences may lead to difficulties or errors in diagnosing and treating patients.

W143) Hypoglycemia as an initial symptom in a patient with a solitary fibrous tumor of the pleura : M. Vallmajor-Muñoz¹, M. Serrat-Bonet¹, M. Farres-Baseiria¹, J. Costa-Montal¹, M. Custal-Teixidor¹, A. Gomez-Lozano¹ : 1. Emergency, Hospital Sta Caterina, Salt, Girona, Spain.

CASE: We report a 55-years-old male with a personal history of diabetes mellitus, hypertension and dislipidemia. The patient's current medications include metformin, atorvastatin and enalapril. The patient was admitted to the emergency room, presenting with disorientation as a unique clinical sign of hypoglycemia. His blood glucose level was 33 mg/dl. In order to correct it, vein glucose was infused. Patient denied cough, dyspnea or respiratory insufficiency. On physical examination a striking finding was observed: the presence of severe hippocratic fingers in the hands. Cardiorespiratory auscultation and other examinations didn't reveal any abnormalities. Rx thorax: well-defined mass in the right hemithorax. Chest CT: a large mass occupying two-thirds of the right hemithorax was revealed. CT images showed a smooth and well-defined soft tissue density mass, with an homogenous contrast, adjacent to the pleura and deformed minor fissure. There was no evidence of chest wall invasion with a solitary fibrous tumor in the right hemithorax. Patient was submitted to a Tru-Cut needle biopsy and a localized fibrous tumor of the pleura with moderate proliferative index was reported by the pathologist. Patient was referred for thoracic surgery in order to excise the mass. DISCUSSION: SFTP is usually a benign neoplasm, but it can recur. About 46% of patients are asymptomatic. The most common symptoms, dyspnea, coughing and chest pain, are present in 40% of patients. Extrathoracic manifestations, including arthritic pain and finger clubbing (Hypertrophic pulmonary osteoarthropathy), and hypoglycemia occurs in approximately 4-17% of patients. The mechanism responsible for the hypoglycemia appears to be an excessive consumption of glucose, the production of high levels of insulin-like growth factor II (IGF-II) or the action of gluconeogenesis inhibitors segregated by the tumor. The most important radiological tool is the chest radiograph. Percutaneous needle puncture allows the diagnose in some cases. The definitive diagnose requires a histology sample, usually after surgery. Surgical resection is curative in most patients.





W144) Thyrotoxic hypokalemic paralysis: case report : Alberto Kurzbaum¹ : 1. Emergency Medicine, The Baruch Padeh Medical Center, Poria, Tiberias, Israel.

BACKGROUND: Thyrotoxic periodic paralysis (TPP) is a rare endocrine emergency associated with thyrotoxicosis in which there are episodes of muscle weakness in people with high levels of thyroid hormone. Any cause of thyrotoxicosis can cause an attack of TPP in susceptible patients including secondary thyrotoxicosis due to amiodarone. This condition has three characteristic symptoms: elevated thyroid hormones, hypokalemia and episodic muscle

weakness or paralysis. TPP has a clear racial and sex distribution for males of Asian descent and is rarely reported in Caucasians. CASE: We present a case of TPP as the first manifestation of thyrotoxicosis. The patient demonstrates the salient manifestations of this endocrine emergency.

We discuss the pathophysiology, diagnosis and treatment. DISCUSSION: The emergency physician is often the first to see these patients and deserves a high index of suspicion to avoid a missed diagnosis and should consider that population groups other than Asians may be affected.

W145) END TIDAL CARBON DIOXIDE: A PREDICTIVE TOOL FOR EXCLUDING METABOLIC DISTURBANCES IN EMERGENCY SETTINGS : Oktay Eray¹, Mutlu Kartal¹, Stephan Rinnert², Erkan Goksu¹, Firat Bektas¹, Soner Isik¹ : 1. Akdeniz University Hospital Emergency Department, Antalya, Turkey. 2. SUNY Downstate / Kings County Hospital Department of Emergency Medicine, New York, NY, USA.

INTRODUCTION: The purpose of this study is to examine the relation between end-tidal carbon dioxide (ETCO₂) measurement and bicarbonate level reflecting the patient's metabolic status. **METHODS:** This prospective cross-sectional study was carried out over a 3-month period in a tertiary care university hospital emergency department with an annual census of 75,000 visits. During the study period, every emergency room patient requiring arterial blood gas analysis (ABG) for any medical indication had a simultaneous ETCO₂ measurement using a Medlab Cap 10 ® side stream capnograph. The demographics and clinical outcomes of the patients were recorded. **RESULTS:** Of 399 eligible patients, 240 with possible metabolic disturbance were enrolled into the study. There was a statistically significant correlation between the value of ETCO₂ and bicarbonate (HCO₃) levels (r=0.506). The mean ETCO₂ levels were statistically significantly lower in patients who died (26.5±7.2, 95% CI: 24.2-28.6 vs 30±7.5, 95% CI: 29-31; p=0.007) and who had low bicarbonate levels (25.7±6.7, 95% CI: 24.3-27.1 vs 31.6±7.1, 95% CI: 30.4-32.8; p=0.000). The value of ETCO₂ measurement in order to detect low bicarbonate level was found to be significant. The area under the ROC curve was 0.734, the (+) LR for ETCO₂ ?25 was 2.7, the (-) LR for ETCO₂ ?36 was 0.05. **CONCLUSION:** ETCO₂ values correlate well with HCO₃ levels and thus might relate to mortality and metabolic acidosis. Therefore, side stream capnograph can be used as a noninvasive diagnostic tool for particularly ruling out suspected metabolic disturbance in the ED.

W146) Tell me your nationality and I'll tell you how you prescribe – a study of prescription habits of doctors from many nations : Mikkel Brabrand¹, Lars Folkestad¹ : 1. Sydvjetjysk Sygehus, Esbjerg, Denmark.

INTRODUCTION: Denmark has not been able to educate enough doctors from the universities for many years. We therefore face a shortage of doctors and have been forced to import doctors from the rest of the world. At the regional hospital in Esbjerg, Denmark, the medical department employs doctors from many nations. We therefore found it natural to examine if there is a difference in how doctors were educated on the western hemisphere (WHD) prescribe

intravenous (i.v.) medicine and fluids when compared to doctors educated in other parts of the world (OD). **METHODS:** All patients admitted to the acute medicinal admission unit at the regional hospital of Esbjerg, Denmark, from October 2nd 2008 to February 19th 2009 were prospectively included in this observational cohort study. A questionnaire containing data on vital signs, admission diagnosis from the admitting physicians and medical history was completed by both receiving nurse and doctor. All charts completed by the doctors were manually searched and prescriptions for i.v. medicine and fluids were noted. Data was analyzed using Chi Squared analysis and is presented descriptively. **RESULTS:** A total of 2,440 patients were admitted during the study period by 69 different doctors. Eleven (15.9%) doctors graduated a university outside the western hemisphere, four (5.8%) doctors graduated a university in the western hemisphere but outside Denmark and 54 (78.3%) doctors graduated a Danish university. WHD prescribed i.v. medicine for 25.9% of their patients while OD prescribed i.v. medicine for 25.2% (not significant). WHD prescribed i.v. fluids for 14.3% of their patients while OD prescribed i.v. fluids for 12.8% (not significant). **CONCLUSION:** We acknowledge that the number of OD is low and that this might influence the results, but we found no significant difference in prescription habits of i.v. fluids and medicine of doctors educated in the western hemisphere when compared to doctors educated in the rest of the world.

W147) I believe this patient has an infection – or does she? A study of hypo- and hyperthermia : Mikkel Brabrand¹, Lars Folkestad¹ : 1. Sydvjetjysk Sygehus, Esbjerg, Denmark.

INTRODUCTION: Infectious disease is one of the most common reasons for acute admissions to a medical department. We set out to find out how often patients admitted to a medical acute admission unit under a diagnosis of infectious disease even had simple hypo- or hyperthermia, and whether or not the receiving doctor believed that the patient in fact had an infection. **METHODS:** All patients admitted to the acute medicinal admission unit at the regional hospital of Esbjerg, Denmark, from October 2nd 2008 to February 19th 2009 were prospectively included. A questionnaire was completed by both receiving nurse and doctor. The receiving doctor was also asked to specify if he/she believed that the patient was infected and if so, where the focus of the infection was. All data are presented descriptively. **RESULTS:** A total of 1,998 patients were included in the study and 1,460 had the temperature recorded at admission (73.1%). Of the 1,460 patients 379 (26.0%) was admitted under a diagnosis of infectious disease. Of the 379 patients admitted with suspected infection seven (1.8%) patients had a temperature below 36.0 degrees Celsius. 140 (36.9%) had a temperature above 37.9 degrees Celsius and 232 (61.2%) had a normal temperature. The receiving doctors believed that 13 (5.4%) patients did indeed not have an infection; of these one had a temperature below 36.0 degrees and one above 37.9. Of 226 patients where the receiving doctor believed that they were infected five (2.2%) had a temperature below 36.0 degrees Celsius and 89 (39.4%) had a temperature above 37.9, leaving 132 patients with a normal temperature (58.4%). The receiving doctors had not specified whether he/she believed that the patient was infected on 140 patients (36.9%). **CONCLUSION:** Suspected infectious disease is a common reason for acute admission to a medical department. Most patients admitted for suspected infectious disease had a normal temperature at admission, 1.8% had hypothermia and 36.9% had hyperthermia. Of patients with believed infection by the receiving doctor 58.4% had a normal

temperature.

W148) Evaluation of short term association between emergency department admission of chronic obstructive pulmonary disease and outdoor air pollution in Tehran city : Ali Bidari², Hassan Amiri¹, Samad Shams vahdati¹, Niloofar Godrati³, Mona Alikhani¹ : 1. Tabriz university of medical science,emergency department, Tabriz, Iran. 2. Iran university of medical science,emergency department, Tehran, Iran. 3. Tehran university of medical science,hematology oncology department, Tehran, Iran.

INTRODUCTION: That there are many communities at risk was most forcefully brought home by a series of air pollution episodes. Tehran city is one of the most polluted cities in the world. The presence of one or more air pollutants with a certain concentration in a particular period of time can cause several adverse effects on human and animals' wellbeing that can cause much morbidity. There are several pollutants in the air, but some of them can cause severe adverse effects on the lungs and airways and these are discussed in this study. **METHODS:** In this retrospective cross-sectional study we reviewed the patients who referred with exacerbation of COPD to the ED of the Hazrat – e – Rasool Hospital and simultaneously analyzed the rate of admission from documentation the charts of the patients with concentration of the important air pollutants (Co, So2, O3, No2, PM10) between March 2004 to March 2006. **RESULTS:** In this study 1958 patients were enrolled. Among the 1958 patients enrolled in this study, 887 (53.5%) were male and 771 (46.5%) were female. According to statistical analysis there is significant correlation between the concentration of CO, PM10, So2 and ED admission rate of COPD exacerbation patients (P: 0.031, 0.008, and 0.001 respectively). The effect of PM10, So2 and CO was more significant respectively in logistic regression on ED admission. **CONCLUSION:** There was significant correlation between concentrations of air pollutants with the number of ED admissions for COPD exacerbations.

W149) Acute cutaneous reaction to gadolinium in a patient receiving sulpiride during a radiological study: A case report : Sergio Navarro Gutierrez¹, Asif Iqbal Muhammad¹, Silvia Castells Juan¹, Almudena Lluh Sastrigues¹, Salvador Sendra Esteve¹, Inmaculada Baeza Galdon¹, Pedro Garcia Bermejo¹, Jose Luis Ruiz Lopez¹ : 1. Emergency Department, Hospital de la Ribera, Alzira, Valencia, Spain.

BACKGROUND: Urticaria and dermatitis may appear in patients after the administration of intravenous contrast dye during diagnostic radiological procedures. **CASE:** We present a case of a 43 year old woman transferred to our ED from the Radiology Department with pruritus and cutaneous lesions after the administration of intravenous gadolinium during a routine MRI. The patient complained of intense pruritus and urticaria to her back, chest and limbs. With the onset of symptoms she was treated with 40 mg of methylprednisolone by the Radiology Department staff. According to the past medical history and initial evaluation, the patient did not have any known allergies to medications or contrast agents. She reported that she was being treated with sulpiride 50 mg every 8 hours for dizziness during the last 3 days. After physical examination, she was treated with 2 mg intravenous dexchlorpheniramine maleate and 40 mg of methylprednisolone with resolution of the skin lesions as well as the pruritus within 15 minutes. She was discharged home after a period of 6 hours of observation. **DISCUSSION:** Urticaria has been reported with sulpiride use. Gadolinium has been linked to cutaneous

lesions, urticaria and other adverse reactions as well. The most common reactions to gadolinium are nausea, vomiting and headache. These reactions usually are self-limited and are reported to occur in less than 1% of patients. Gadolinium is currently considered a safe alternative for use in diagnostic radiological procedures in persons with a documented allergic response to iodine-based contrast dyes. Urticaria and pruritus after administration of intravenous gadolinium in patients treated with sulphiride has not been reported before, however, separately each substance has been reported to have these adverse reactions. We suggest that it is possible that the combination of sulphiride and gadolinium may increase the risk of allergic reactions considering that the patient was having treatment with sulphiride for three days.

W150) Interest in Emergency Medicine Among Medical Students of the Erasmus University Medical Centre of Rotterdam : Terrence Mulligan¹, Jorn Fierstra², Sanjeev Grewal² : 1. Emergency Medicine, Erasmus Medical Center, Rotterdam, Netherlands. 2. Erasmus University School of Medicine, Rotterdam, Netherlands.

INTRODUCTION: The Netherlands is one of the 25+ countries that have started training residents to become Emergency Medicine physicians. We want to investigate the interest in Emergency Medicine among medical students of the Erasmus University Medical Center of Rotterdam. **METHODS:** A ten item questionnaire was distributed among first, second and third year medical students of the Erasmus University Medical Center of Rotterdam on the same day and during general lectures. The questionnaire was developed to take less than 10 minutes to fill in and was completely voluntary and anonymous. **RESULTS:** We distributed a total number of 800 questionnaires to the medical students who were present that day. 534 Medical students (188 first year, 157 second year and 189 third year) filled in the questionnaire, a response rate of 67% among the medical students who were attending this day general lectures. **Discussion:** There was very high interest in Emergency Medicine according to the results across the several categories in our questionnaire. But despite this fact there are as yet no specific student organizations, didactic or practical training courses or official student rotations in Emergency Medicine. The narrowing of this gap can be facilitated by establishing an Emergency Medicine Student Organization, and by restructuring of the medical school curriculum to include academic, didactic courses in Emergency Medicine, along with official required or elective rotations in the Emergency Department.

CONCLUSION: There is a high amount of interest in Emergency Medicine among first, second and third year medical students of the Erasmus University Medical Center of Rotterdam. This outcome can be supportive for the establishment of an Emergency Medicine Student Organization and by restructuring of the medical school curriculum to include academic, didactic courses in Emergency Medicine, along with official required or elective rotations in the Emergency Department. Given the interest, we suggest that this study should be duplicated in the other medical faculties throughout the Netherlands.

W151) An Italian Knowledge Translation Program for Emergency Health Care Professionals : Gemma C. Morabito¹, Michele Alzetta², Fabio De Iaco⁶, Andrea Fabbri⁷, Mauro Fallani³, Mauro Gallitelli⁴, Paolo Groff⁸, Gianni Zironi⁵ : 1. UOC Medicina d'urgenza e Pronto Soccorso. Azienda Ospedaliera Sant'Andrea , Roma, Italy. 2. UOC Pronto Soccorso - SUEM, Venezia, Italy. 3. UO Medicina d'urgenza e Pronto

Soccorso, ASUR 3 Marche, Fano, Italy. 4. Heart of England NHS Trust, Birmingham, United Kingdom. 5. U.O. Medicina Interna - Policlinico S.Orsola-Malpighi, Bologna, Italy. 6. UOS Pronto Soccorso, Imperia, Italy. 7. DEA Ospedale GB Morgagni e Pierantoni, Forli, Italy. 8. UO Medicina d'urgenza e Pronto Soccorso "Madonna del Soccorso", San Benedetto del Tronto, Italy.

INTRODUCTION: Knowledge translation (KT) is a recent research field describing any activity or process that facilitates the transfer of high-quality evidence from research into effective changes in health policy or clinical practice. The know-do gap (discrepancy between what is known and what is done) is well recognized as a major impediment to high-quality health care. We present an Italian KT program aimed at disseminating best practice in the Italian emergency community. **METHODS AND RESULTS:** Ten years ago one of the authors created an e-mail newsletter of advances and best practices in emergency medical care. The newsletter became ever more widespread: at the moment there are 643 subscriptions, but in the last few months these have been growing at a rate of 15 to 20 a week. Eighty-five percent of the recipients are physicians, 11% nurses and 4% students. Ninety-three percent of the recipients work in various fields of emergency medicine, 9% of them in the pre-hospital setting. Ten percent of physicians are chief directors of Emergency Departments, and several of them have asked to have all their ED staff on the newsletter list. Since January 2009 the newsletter has evolved into a website which has had an ongoing logarithmic positive trend of increasing accesses (613 more in February, 1720 more in March and 4109 more in April). A growing number of emergency physicians and nurses are now collaborating with the website. In an online survey on the website itself 96% of visitors declared that the site had had significant impact on their clinical practice; only 4% of them were indifferent or judged the impact as weak. More than 50% thought of the English language as a barrier to using other educational opportunities.

CONCLUSIONS: In countries where no suitable programs in EM are available, similar initiatives could be a valid method for adopting advancements in emergency medicine and adapting them to the local situation. Such initiatives would be a virtual workshop where emergency physicians and nurses gather information but also learn how to use existing evidence-based facilities for their continuous education.

W152) Evaluation of electronic learning access and tendency in general practitioners : Amir Nejadi¹, Mohammad Jalili¹, Amin Shams Akhtari¹, Ramtin Mehdizadeh Tehrani¹ : 1. Emergency Department, Tehran University of Medical Sciences, Tehran, Iran.

INTRODUCTION: Different methods of learning can facilitate educational skills. Electronic Learning (EL) plays an important role in acquiring new educational skills.

METHODS: We performed a cross-sectional study using a simple questionnaire to evaluate access and tendency to electronic learning among general practitioners in the emergency department of Imam Khomeini hospital. The mentioned questionnaire involves some questions about study group access to high utility internet, active mail box, familiarity with university educational programs, EL interest and ideas about the role of EL in medical education.

RESULTS: One hundred general practitioners participated in this study. Ninety-four people completely answered the questions. Fifty-five respondents (57.44%) were male and 31

(32.97%) were females. About half of the participants had access to high utility internet. Half of them used the internet network everyday but 20.21% didn't use the internet network for a week. Many of the participants (69.4%) have active Email accounts. Among 94 respondents, just 13.82% were familiar with the university EL programs and about 7 persons used the programs routinely. However 75.53% believe that EL is a necessary educational method in medical learning. Finally 71.27% were interested in electronic learning. **CONCLUSION:** According to our data, familiarity and use of EL is very limited despite good accessibility among respondents to the internet network. It seems it is necessary to make the practitioners aware of the electronic learning programs.

W153) Triage training courses for nurses who work in ED's in Tehran : Amir Nejati¹, Reza Shariat Moharari¹, Seyed Hossein Seyed Hosseini Davarni¹, Shaghayegh Ahangar Narenjbon² : 1. Emergency Department, Tehran University of Medical Sciences, Tehran, Iran. 2. Tehran University, Tehran, Iran.

INTRODUCTION: There are many educational courses in our country, but we have few triage courses. All big hospitals have emergency departments; many clinics and small hospitals have emergency department, too. Most of these facilities accept patients without standard triage but sort them according to their vital signs and general appearance. Nurses working in these emergency rooms need to update their knowledge about triage. **Objectives:** To determine the effectiveness of triage courses for nurses that work in Tehran (capital of Iran). The knowledge of the 85 nurses before and three months after a course was assessed. **METHODS:** 85 of the nurses that work in emergency departments of 5 hospitals participated in the study. Initially, they were assessed with a multiple choice questionnaire. The score was based on maximum of 100. After that, five 1-day triage courses by three emergency physicians were scheduled. All of the teachers are faculties of Tehran University of Medical Sciences. Three months later, we arranged another exam and retested the subjects. **RESULTS:** Less than half of the trainees were men (32%) with mean age of 29.7 ± 6.7 years old. In the first phase, the mean score was 26.4 ± 10.2 and conversely related to mean age of the nurses. Maximum score was 39. In the second phase (after the course) the mean score was 64.7 ± 18.4 and the maximum score was 84. **CONCLUSION:** The triage courses were effective in improving the knowledge of the nurses and all of them were satisfied with the courses, but we need more triage courses in our country. Studies to evaluate the skills of nurses and accuracy of their triage should be scheduled.

W154) Evaluation of Interns' Satisfaction with the Emergency Department Training Program : Alireza Ala¹, Rozbeh Rajaei¹ : 1. Tabriz University of Medical Science, Tabriz, Iran.

INTRODUCTION: The aim of this study was to evaluate satisfaction of interns with emergency department rotation in Tabriz University of Medical Sciences with the education and to assess areas of improvement. **METHODS:** A cross-sectional study was carried out among 120 interns at the end of one-month emergency medicine rotation in Imam Reza teaching hospital affiliated to Tabriz University of Medical Sciences. They were asked to fill out a self-reported questionnaire regarding the training program and their agreement on prolongation of the training period. Data was analyzed descriptively using SPSS 13 and Paired samples T-test, with considering $p < 0.05$. **RESULTS:** The rate of satisfaction with the current

training program was reported as medium to high by the majority of the participants. The rate of satisfaction with training of clinical management in special emergent conditions was medium to high for the majority of interns (except for allergic emergencies which was reported to be low). Satisfaction was reported medium to very high for procedural training. 64.2% of the participants were agreed highly to very highly with suggestions to prolong the period of Emergency Medicine rotation from 1 to 2 months. CONCLUSION: In comparison with previous studies, the interns' satisfaction with the emergency medicine training program was significantly higher and the majority of cases agreed that the emergency department rotation should be longer. It seems necessary to improve the current status.

W155) A New Training Model in Managing Emergencies for Primary Health Care Providers : Navid Behzadi Koochani¹, Arturo De Blas De Blas², Juan Carlos Abánades Herranz³, Jaime Innerarity Martínez⁴, Manuel Taboada Castro¹, Jesus Vazquez Castro⁵ : 1. SUMMA112, Madrid, Spain. 2. SAMUR-PC, Madrid, Spain. 3. SERMAS;Unit of Formation and Investigation Area 4, Madrid, Spain. 4. SERMAS;Coordinator of the Center of Health Sanchinarro, Area 4, Madrid, Spain. 5. SERMAS;Medical director Area 5, Madrid, Spain.

INTRODUCTION: The improvement in managing emergency patients ranks first in the survey of needs for continuous professional development of primary health providers in Madrid. The traditional strategy of emergencies training courses given outside of the Primary Health Center (PHC), has been shown unhelpful. OBJECTIVES: To determine whether a new model of training in managing emergencies meets expectations and is helpful for improving the work of health professionals of the PHC, and to determine the degree of overall satisfaction. METHODS: We designed an accredited workshop for clinical cases, which consists of 2 sessions of 1.5 hour separated by a week that has been developed in the emergency room of 21 PHCs during the last year, using their own materials. At the first session, in the emergency room as organized, three health professionals of the PHC with a simulated CPR doll, described and developed a clinical case. The difficulties that arise during the implementation of the case serve to identify areas for improvement, both in material handling and in the room and work organization. When finished, we formed a working group to rearrange the room. In the second session, in the previously reorganized room, participants developed cases, with quite different management, so as to improve training in handling more prevalent emergencies, and optimizing the organization and usefulness of the material available. At the end of the workshop, the participants had to fill out an evaluation form which, among others, includes three questions, rated from 1 to 10: Utility to your regular work; Responding to the previous expectations and Overall satisfaction. RESULTS: In 13 editions we have accumulated 165 surveys. The weighted mean and standard deviation for each of the three items described are: 8.88 (SD:1.37), 8.81 (SD:1.15) and 8.23 (SD:1.61) respectively. CONCLUSIONS: The on-site training with the material that each PHC already had, is a useful alternative for training of PHC professionals, as it encourages teamwork, and raises concerns and structural changes in the PHC that facilitate and improve the management of these situations.



Before the first session: non-useful organization



After the Emergency room is reorganized

W156) New Methods of Interactive E-learning Training in Emergency Department Triage : Gian A. Cibinel¹, Elena Mana¹, Chiara Odetto¹, Cristina Sfasciamuro¹, Marina Civita¹, Alberto Goffi¹, Marco Civita², Merixell Espuga³ : 1. ASL TO3 - SC Medicina e Chirurgia d'Urgenza, Pinerolo, Torino, Italy. 2. Pixeldixit – Consultoría e-learning , Barcelona, Spain. 3. Unidad de Prevención de Riesgos Laborales - Hospital Universitario Vall d'Hebron, Barcelona, Spain.

BACKGROUND: Triage is a process prioritizing patients based on the severity of their condition. According to the National Legislation on Health (DM 17/05/96), National Triage Guidelines 2001 and to the Piedmont Regional Law n° 43 23/03/2005 every Emergency Department (ED) must respond to an acceptance of a patient with a triage system. The provided triage activity, as the first moment evaluation of patients is based on defined criteria that allow establishing priorities for action. This function is performed by trained nursing staff.

DISCUSSION: Our training department has prepared a specific course about triage for health professionals. The following are the course objectives: (1) to acquire a scientific methodology of patients evaluation that includes the use of interview, observation and reasoning based on

clinical semeiotics; (2) to acquire skills needed to rational management of critical situations considering the psychological dynamics that develop in triage between patients, families and/or care-givers; (3) to inquire into aspects linked to empowerment and to professional legal issues derived from the triage activity; (4) to acquire the methodology for the design and updating of protocols in triage assessment, according to the international, national and regional guidelines; (5) to acquire the methodologies to determine possible indicators of effectiveness, efficiency and performance. The current organization includes a residential course of three days in which students learn general principles, legal issues of triage, management of reports and criticism and finally application of the methodology with processes analysis and practical exercises. In the last years, technology has made it possible to change the training by broadening the potential user from a residential course to an e-learning one. Recently, the technological evolution has made it possible to simplify the production and maintenance process of multimedia e-learning contents. In particular, this communication aims to illustrate the development of a tele-didactics project based on a “rapid e-learning” authoring tool.

W157) Advancing the Teaching of Emergency Medicine: A Global Emergency Medicine Education Toolbox : Robert Rogers¹, Amal Mattu¹, Terrence Mulligan², Mel Herbert³, Winters Michael¹, Joseph Martinez¹ : 1. University of Maryland, Baltimore, Maryland, USA, Baltimore , MD, USA. 2. Erasmus Medical Center, Rotterdam, Netherlands. 3. USC-LAC Emergency Medicine Residency, Los Angeles, CA, USA.

Emergency Medicine (EM), although well established in the United States, is still in its infancy in many countries. EM physicians who are attempting to establish the specialty of EM in their countries also face the daunting task of writing, collecting and disseminating educational materials which are specific to EM and its practice in their own countries, and many EM educators are constantly forced to “reinvent the wheel” regarding EM educational materials. More important, educational advances that may impact global EM educational efforts need to be shared with countries that are in need of such tools. With this in mind, we developed two key educational projects that have the potential to advance the teaching of emergency medicine all over the world. The main goal of these two projects is to provide emergency medicine educators with two unique resources for becoming better educators and advancing emergency medicine education. The first project is the development of a new teaching text, *Practical Teaching in Emergency Medicine*. The goal of this text is to provide EM educators with basic tools for teaching the practice of emergency medicine. To date, there has not been a single resource developed for educators of EM. The second project that is now well underway since April 2009 is a new emergency medicine education podcast, entitled "EMRAP-Educators Edition" (EMRAP = *Emergency Medicine Reviews and Perspectives*). This podcast, free on iTunes and downloadable from the website (www.emrap-ee.com) is posted monthly and discusses general topics in faculty development and the teaching of emergency medicine. In addition, plans are in effect to specifically cater these two EM educational tools to meet the specific needs of emerging EM systems in other countries, and future renditions of these tools will be formulated with the international emergency physician in mind. It is hoped that both of these educational advances will provide EM educators from many countries with tools to enhance teaching emergency medicine to medical students and junior physicians.



EMRAP: Educators Edition

The team of EMRAP-Educators' Edition- Rob Rogers, Mel Herbert, and Amal Mattu

Practical Teaching in Emergency Medicine

EDITED BY

Robert L. Rogers

Amal Mattu, Michael Winters, Joseph Martinez



 WILEY-BLACKWELL

W158) Curriculum development in a surgical department : Charlotte Paltved¹ : 1. Surgery, Hospital of Koege , Koege, Denmark.

INTRODUCTION: Publications have identified deficiencies and risks of ward care. Team performance has been identified as an important focus for safety and quality improvement and is essential for developing learning from experiential feedback, stimulating creative problem solving and achieving enhanced performance. **METHODS:** A needs assessment of the management of acutely and potentially critically ill patients in the ward has been carried out. The study design was interprofessional and consisted of a retrospective audit, interprofessional focus group interviews and full scale simulation in the ward. **RESULTS:** In our test simulation we confirmed the results from the audit and the interviews and in CRM-terms we identified: Lack of re-evaluation when patient was deteriorating; Presence of fixation errors; Unclear leadership and followership; Need for safe communication. **Curriculum:** The data obtained from our survey was subsequently used to develop objectives for a curriculum to address the identified needs. Interprofessional case-based sessions on a weekly basis. Interprofessional two-day course for medical and nursing staff: Hand outs; Presentations of CRM principles as mentioned above; Full scale simulation in surgical scenarios followed by debriefing sessions; CRM practice; SBAR training; Implementation of new guidelines. **Evaluation:** The course was evaluated with the same questionnaire just before the course, right after the course and 6 months later in order to establish if retention occurred. **CONCLUSIONS:** We conclude that this form of multidisciplinary needs assessment provides a useful means of identifying issues for structuring a relevant multiprofessional educational program. The content clearly needs to address skills, judgment and attitude as well as knowledge.

W159) Evaluation study of osasunLingua like tool of aid for the accomplishment of clinical history in Emergency Departments : Jose Ramon Aginaga Badiola¹, Ainhoa Gonzalez Querejeta¹, M.Carmen Valois Nuñez¹, Hur Lertxundi Arrieta¹, Ricardo Palenzuela Arocena¹, Ignacio Ventura Huarte¹ : 1. Emergency department, Hospital Donostia, Donostia, Gipuzkoa, Spain.

INTRODUCTION: In the sixth year of medical degree in Basque Country University (UPV-EHU), Emergency is a compulsory subject, with theoretical and practical contents. The students must attend clinical practices in the Hospital Emergency Department (ED) and they have to perform clinical histories to the patients. osasunLingua is a new structured questionnaire developed to facilitate the execution of clinical histories in the ED, that is translated into 12 languages. It is divided in 25 chapters that includes from the reception of the patient, to previous medical history, systematic inquiry, and the physical examination. **OBJECTIVE:** Evaluation of osasunLingua like tool for the accomplishment of clinical history. **METHODS:** All the students of sixth year in the UPV-EHU in Donostia (altogether 41 students) from 2008/09 to 2009/04 used osasunLingua. When the practices were finished, a voluntary and anonymous survey was given to determine the degree of satisfaction and applicability of osasunLingua. **RESULTS:** We collected 36 of 41 given surveys. The response set had a numerical correspondence from 1 (worse option) to 4-5 (better option). The most important results were: 1) 72% considered that the questions of the questionnaire were well ordered (opt.5/5) and 22% rather well ordered (opt.4/5); 2) 86% thought osasunLingua

included most of questions (opt.4/4) that are necessary to ask the patient to make a correct and complete anamnesis in ED; 3) 58% considered that the language used in osasunLingua was quite colloquial and comprehensible for the patient (4/5) and 36% very colloquial (5/5); 4) 80% reported osasunLingua could be a tool to aid in the accomplishment of clinical histories in the Emergency Department often (4/4) and 19% enough times (3/4). CONCLUSIONS: The students considered osasunLingua a good tool of support for the accomplishment of clinical histories, mainly in the ED, that is well structured, contains many questions and answers; it uses a colloquial and comprehensible language for the patient, and is as good guide for the clinical interview during clinical practices.

W160) Investigating Interest in Emergency Medicine among Medical Students at Medical Schools in the Netherlands : Shiromani Janki², Terrence Mulligan¹ : 1. Emergency Medicine, Erasmus Medical Center, Rotterdam, Netherlands. 2. Erasmus University School of Medicine, Rotterdam, Netherlands.

INTRODUCTION: Due to the high interest in EM among medical students and the success of the SEHSO Rotterdam (Spoedeisende Hulp Studenten Organizatie—Emergency Medicine Student Organization), the Dutch Society for Emergency Physicians (the NVSHA) wants to establish a national SEHSO. It will be part of the NVSHA and support the development of emergency medicine in the Netherlands especially in the medical schools. The national SEHSO will be a collaboration between medical students of all 8 medical schools. By establishing a national organization emergency medicine will be more recognized by students as an upcoming specialty and hopefully contribute to the process of the development. To achieve this a 10-point questionnaire will be duplicated at every medical school in the Netherlands, in order to determine if all their medical students are interested in emergency medicine and an emergency medicine student organization. METHODS: Contacts will be made with the medical schools and a 10-point questionnaire will be distributed among all medical students of the remaining 7 medical schools in the Netherlands. The questionnaires will be analyzed similar to the Rotterdam study to compare the results. The completed questionnaire forms will be analyzed in SPSS (Statistical Package for the Social Sciences). Data will be collected from every medical school in order to combine them together to obtain national results. RESULTS: All results of the 10 questions being asked on the questionnaire of every medical school will be presented as bar diagrams, separated by medical schools and then combined for a national result. This article will reveal if medical students of all medical schools in the Netherlands are interested in emergency medicine and/or in a student organization. If the results of this study are positive at any particular medical school, this study will direct the foundation, development and functioning of a SEHSO at that university. CONCLUSION: To be announced by time of MEMC.

W161) Factors that Influence the Reliability of Diagnoses in Emergency Medicine : Muhammad Shahid¹, Kamran Hameed¹, Osama Afzal¹, Junaid Razzak¹ : 1. Emergency Medicine, Aga Khan University Hospital, Karachi, Sindh, Pakistan.

INTRODUCTION: Emergency Medicine is a specialty which is gaining recognition as a separate specialty only over the recent past. Many of the developing countries have yet to

establish the specialty in their countries. There is also a background concern that introduction of trainees in such high stake areas may compromise patient care. **METHODS:** One of the indicators for Emergency Room performance is the ability to establish the correct diagnoses within the Emergency Room. The authors chose to examine the non congruence of Emergency Room diagnoses to that established after hospital stay for three selected years including one before the introduction of training program in Emergency Medicine and one seven years down the line at Aga Khan University Hospital Pakistan. A total of 8488 records were reviewed and all disparate diagnoses were recorded and categorized. **RESULTS:** A significant reduction in the percentage of disparate diagnoses was seen over the years from 41% in the initial year to 14% in the last year evaluated. The authors examined the change and the areas of major differences. It also discussed the possible factors that might have influenced the change to be taken to ensure delivery of quality care to Emergency Room patients. **CONCLUSION:** Over the years there has been a significant improvement in the reliability of Emergency Room diagnoses in our hospital. The reasons for these are development of services, educational component (core curriculum), recruitment of faculty, introduction of monitoring mechanisms and rotations of residents in different disciplines.

W162) Establishing an Emergency Medicine Student Organisation in the Erasmus University Medical Centre of Rotterdam, the Netherlands : Amber Hoek², Shiromani Janki², Terrence Mulligan¹ : 1. Emergency Medicine, Erasmus Medical Center, Rotterdam, Netherlands. 2. Erasmus University School of Medicine, Rotterdam, Netherlands.

INTRODUCTION: Emergency Medicine is an upcoming specialty in many countries. In Holland 106 of 126 hospitals have a specialized Emergency Room. Nowadays, Emergency Medicine specialty training is given in 21+ hospitals around the country. It is important to investigate whether medical students are interested in Emergency Medicine and in becoming an Emergency Medicine physicians. Research indicated a high amount of interest in Emergency Medicine among first, second and third year medical students of the Erasmus University Medical Center of Rotterdam. Referring to this research, ED Director Prof. Dr. Terry Mulligan organized the formation the 'Spoedeisende Hulp Studenten Organisatie' (SEHSO) for medical students interested in Emergency Medicine. **METHODS:** These are the goals of the SEHSO: Support the interest in emergency medicine; Supply interested medical students with extra information about emergency medicine beside the existing curriculum; Support the medical student with the making of career-choices related to emergency medicine. **RESULTS:** We started in May 2007 with the preparations for the SEHSO. On September 25th 2007 we held our first meeting with the subject: "EM Development in the Netherlands and Worldwide". This meeting was visited by 75 medical students. After this lecture we organized more meetings and activities including rotations, volunteering during great events, and workshops. **CONCLUSION:** Research showed that there is a high amount of interest in Emergency Medicine among first, second and third year medical students of the Erasmus University Medical Center of Rotterdam. Because of this, it was possible to arrange an SEHSO with the goals to support the interest in emergency medicine, to supply interested medical students with extra information about emergency medicine beside the existing curriculum and to support the medical student by making career choices related to emergency medicine. One year after starting the SEHSO multiple meetings and activities were organized. Our next goal is

to arrange a national SEHSO.

W163) Assessment of emergency medicine subgraduate knowledge about substantial measures in emergent situations at Imam Hossein Educational Hospital of SBMU in year 2008 : Anita Sabzghabaei², Majid Shojaei¹, Ali Arhami¹, Shahram Alamdari¹ : 1. Emam hosein hospital, Tehran, Iran. 2. shariati hospital, Tehran, Iran.

INTRODUCTION: Emergency medicine subgraduate education needs to be clinically focused on common specific chief complaints and have the capacity to change practice and patient outcome. General practitioners are the first visitors of patients in hospital and clinics. They have no chance for consultation in emergent situation. On the other hand, there is no educational course for emergency medicine subinternship, so they must have enough knowledge in assessment and treatment of specific emergent situations. The aim of this research was to assess subgraduate knowledge about essential measures in emergency conditions.

METHODS: This was a prospective, non-randomized study on subgraduate student enrolled in an EM course at Imam Hossein Educational Hospital of Shahid Beheshti Medical University. A 15 questions pretest assessed preexisting knowledge about specific emergent situations and the same questions were asked as a final exam for assessing the knowledge at the end of a 15 day EM course. The questions are based on EM attending physicians' ideas and educational class for them based on EM textbooks (Tintinalli 2004, Rosen 2006). This research was conducted from September 2007 until May 2008. In this period 16 groups of EM subgraduate were studied, a total of 118 persons. 3 groups were excluded from study, for a final analysis on 102 persons. The answers were compared with teaching subjects in their course and assessed their result. No one was informed about the research goals. **RESULTS:** Before starting the course, almost all of subgraduates knew the answer of 3 questions and no more than 10 persons knew 7 questions. In pretest 32.7% of subgraduates and on posttest 78.4% were able to answer the majority of questions.(P-value <0.001). All of them were satisfied with this course. **CONCLUSION:** With an EM course, knowledge of subgraduates increased significantly, but it's not desirable. So essential educational measures on EM should be compiled and be a key component of subgraduate educations.

W164) Administration & Management Fellowships In Emergency Medicine for Dutch Emergency Physicians : Terrence Mulligan¹ : 1. Emergency Medicine, Erasmus Medical Center, Rotterdam, Netherlands.

Vision: To create an Administration and Management Fellowship in Emergency Medicine for the SEH-artsen / Emergency Physicians and SEH-AIOS / Emergency Medicine residents of the Netherlands. **Rationale:** Currently, the training program for Spoedeisende Hulp artsen as recognized by the SOSG and the NL Board of Medical Specialists is only three years in length. This short training program length does not allow for full instruction in the essential elements of SEH Administration and Management. **Demand:** Currently in the Netherlands, SEH-artsen are critically under-trained in administrative and managerial aspects of emergency medicine. **Strategy:** To establish and develop a 4-month

Administration and Management Fellowship in Emergency Medicine, to be organized, administered and sponsored by ErasmusMC and NVSHA, which will provide administrative, managerial, academic and professional education. This Fellowship will enable and encourage physicians to continue to work at their current hospital positions with a minimum of disturbance to their current work schedules. Progress to Date: There has been tremendous interest in and support of this proposal in its preliminary form from members of NVSHA, SOSG, multiple Departments of Emergency Medicine and SEH-artsen training programs, and from multiple international Departments of Universities and Emergency Medicine.

W165) Stichting Fellowship NVSHA: Comprehensive National Emergency Medicine Development for The Netherlands : Terrence Mulligan¹ : 1. Emergency Medicine, Erasmus Medical Center, Rotterdam, Netherlands.

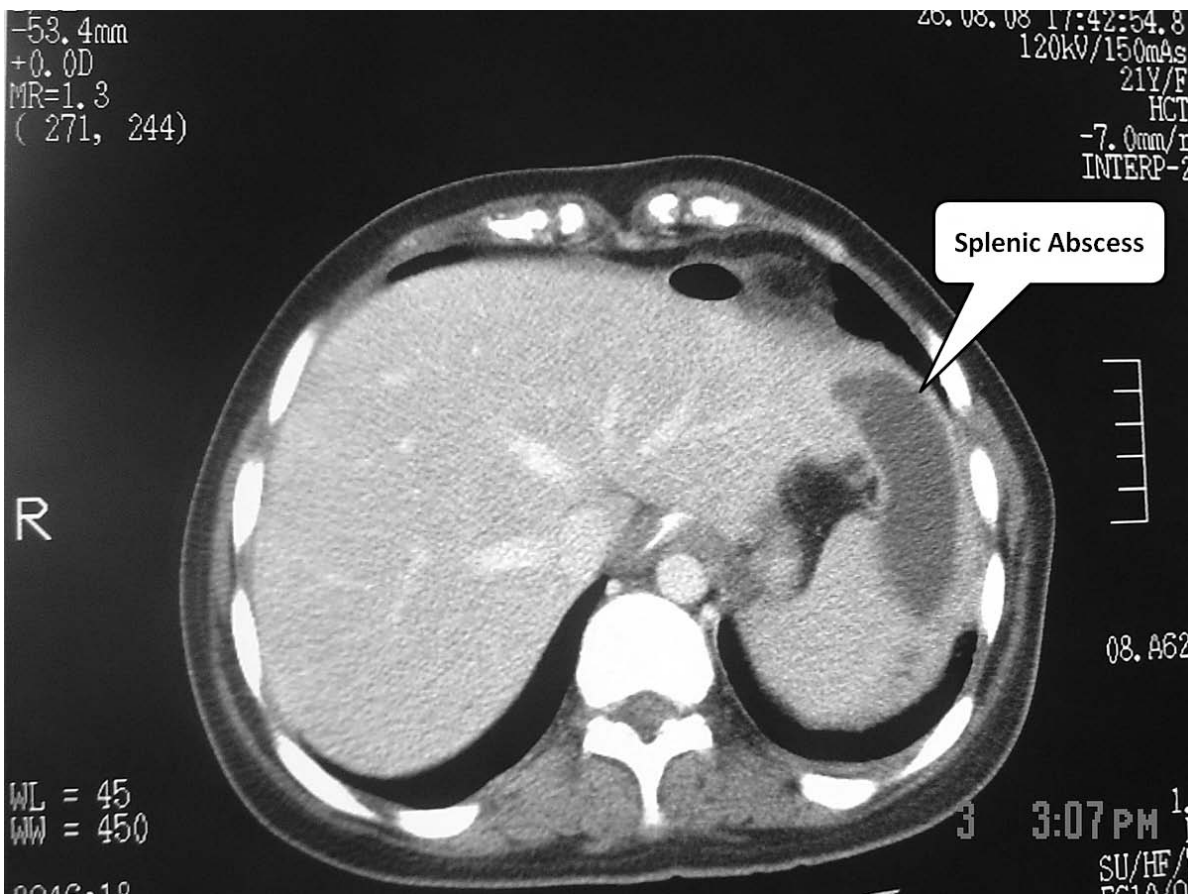
Vision: To create the Stichting Fellowship NVSHA (Fellowship Institute for the Dutch Society of Emergency Physicians) for the Emergency Physicians, Emergency Medicine residents and other medical professionals of the Netherlands, and elsewhere. Rationale: There is critical, overwhelming and growing need for emergency physicians and other emergency medicine resources in the Netherlands, academically, clinically, professionally and administratively. Currently, the training program for EM as recognized by the Dutch Board of Medical Specialists is only three years in length. This short training program length does not allow for full instruction in advanced, essential elements of clinical, academic, administrative, managerial and specialized areas of emergency medicine. Demand: Currently in the Netherlands, there are 21 recognized EM training programs, with 4+ more in development, giving 110+ graduated EPs and 140+ EM residents currently in training. These 250+ EP's are critically undertrained in advanced aspects of emergency medicine clinical practice, administration, economics and policy. Strategy: To establish and develop the Stichting Fellowship NVSHA, to be organized, administered and sponsored by NVSHA, which will provide advanced administrative, managerial, academic and professional education in Emergency Medicine. This Stichting will be formulated to enable and encourage physicians to obtain training while continuing to work at their current hospital positions with a minimum of disturbance to their current work schedules. Progress to Date: There has been tremendous interest in and support of this proposal from members of NVSHA, multiple ED's and EM training programs, from multiple national and international emergency medicine societies, and from multiple domestic and foreign Universities and Departments of Emergency Medicine.

W166) Traditional Kehr's Sign: Left Shoulder Pain Related to Splenic Abscess : Secgin Soyuncu¹, Firat Bektas¹, Yildiray Cete¹, Ozgur Karadeniz¹ : 1. Emergency Department, Akdeniz University, Antalya, Turkey.

BACKGROUND: Kehr's sign was originally described by German surgeon Hans Kehr. It is a classical example of referred pain: irritation of the diaphragm is signaled by the phrenic nerve as pain in the area above the clavicle. CASE: A 21-year-old woman presented to the emergency department with the chief complaint of left shoulder pain. Left shoulder joint movements and range of motion was fully normal and painless in the physical examination.

Neurovascular findings of upper extremity were intact. Abdominal and other physical examinations were normal. Since she had an operation recently, the pain was thought to be Kehr's sign and an abdominal computed tomography was ordered. As it can be seen in the abdominal tomography, the cause of Kehr's sign in this patient is a splenic abscess.

DISCUSSION: This case report showed that patients can come to the ED with nonspecific signs and symptoms of a rare and often misleading condition. As a result, careful history and physical examination should be initially performed on all ED patients.



**W167) Implementation of an ultrasound physics curriculum : James Chan¹, Erika Kube¹, David Bahner¹ :
1. Erika Kube, The Ohio State University Medical Center, Columbus, OH, USA.**

INTRODUCTION: Recent advances in diagnostic ultrasound technology and the realization that it is a safe and effective imaging modality have lead to interest in establishing ultrasound education programs. While it is important to learn ultrasound at the bedside, one must grasp the physics behind diagnostic ultrasound techniques. Having a firm understanding of ultrasound physics and probe manipulation can assist physicians in maximizing the machine's diagnostic

potential while understanding its limitations which will minimize diagnostic overcalls or misdiagnoses from clinical examinations. This ultrasound physics curriculum will form an integral component of a comprehensive ultrasound training program at The Ohio State University Medical Center. **METHODS:** After completing a pre-enrollment survey, the participants will initially be sorted into groups based on their level of training, perceived benefits of knowledge acquisition of the ultrasound physics and instrumentation curriculum. The curriculum itself will consist of a pre-determined series of podcast lectures with their accompanying pre-lecture and post-lecture assessments. Advanced ultrasound physics questions in the form of case studies or short-form answer will be developed and tested on all participants to assess their efficacy in improving the participants' effectiveness in image generation, acquisition, interpretation, problem solving and clinical decision-making. It is envisioned that the survey responses by the participants at the half-year and one-year mark will provide the necessary data to assess efficacy. **CONCLUSIONS:** The overarching goal of this project is to make an initial measured attempt to establishing and standardizing a curriculum for ultrasound education of medical students, residents and fellows. What sets this proposed project apart from others is that the proposed cohort is large and includes many levels of trainees: medical students, residents and fellows. Coupled with the year-long time-frame planned for this study, it could potentially uncover valuable data in terms of the best mix of didactics and hands-on components in an ultrasound training program.

W168) Assessment of an ED-Based Orthopedics Component to a Standard Orthopedics Rotation on Learning Patient Care, Medical Knowledge, Interpersonal Communication Skills, Professionalism, and Systems Based Practice

: **Michael C. Wadman¹**, Lance H. Hoffman¹, Claudia L. Barthold¹, Charles Schmier¹ : 1. Emergency Medicine, University of Nebraska College of Medicine, Omaha, NE, USA.

INTRODUCTION: Objective: To assess the impact of the addition of an emergency department (ED)-based component to the standard orthopedics rotation on resident learning of patient care (PC), medical knowledge (MK), interpersonal communication skills (ICS), professionalism (PROF), and systems based practice (SBP). **METHODS:** We added an ED-based component to the standard orthopedics rotation for a 30 month time period, requiring each resident rotating on orthopedics to complete an assigned number of ED shifts during which the resident was primarily responsible for the evaluation and management of the musculoskeletal complaints presenting to the ED. Upon completion of the rotation, each resident completed a survey utilizing a five-point Likert scale (1=strongly favors standard ortho component, 2=favors standard ortho, 3=neutral, 4= favors ED, and 5=strongly favors ED) addressing the impact of the ED based component compared to the standard orthopedics rotation on their learning of PC (splinting, fracture and dislocation management, sedation and analgesia), MK (musculoskeletal pathophysiology), ICS (communication with patients and their families), PROF (providing compassionate care), and SBP (accessing appropriate follow-up for orthopedic complaints). Means and 95% confidence intervals were calculated. **RESULTS:** Response rate was 85% (17/20). Residents favored the ED based component for learning PC (splinting mean 4.71, 95% CI 4.43-4.99, management of fractures 3.82, 3.44-4.20 and dislocations 4.76, 4.55-4.97, and sedation/analgesia 4.76, 4.55-4.97), ICS (communication with patients/families 3.12, 2.75-3.49) and PROF (compassionate care 3.59, 3.21-3.97), but

avored the standard orthopedic rotation for MK (pathophysiology 2.76, 2.44-3.08) and SBP (facilitating follow-up 2.35, 2.06-2.64). CONCLUSIONS: Residents favored the addition of an ED-based clinical component to the standard orthopedic clinical rotation for learning PC, ICS, and PROF, but favored the standard orthopedic rotation component for MK and SBP.

W169) How Much Do Emergency Physicians Know About Common Legal Situations? : Abraham K. Wai¹, Colin A. Graham¹ : 1. Accident & Emergency , The Chinese University of Hong Kong, Sha Tin, Hong Kong, China.

INTRODUCTION and AIMS:

- (1) To determine the extent of emergency physicians' knowledge of common legal issues involved in emergency care, and
- (2) To assess whether experience and training improved this knowledge.

METHODS:

A standardized structured questionnaire was developed exploring common legal issues in emergency department, namely end-of-life care, mental health and infection control laws, professional responsibility/accountability, and employment issues. Basic demographic data were recorded. Questionnaires were sent to all fellows and trainees of the Hong Kong College of Emergency Medicine.

RESULTS:

Questionnaires were completed by 63/434 (15%) doctors, 36 fellows and 27 trainees. Sixty of 63 respondents worked in the public sector. 25% of trainees and 87% of fellows were not aware of the Bolam principle. 38% of trainees and 48% of fellows recognize compellability of witness in court. Only 19% of trainees and 23% of fellows recognize that it is a criminal offence if they fail to report any scheduled infectious disease. 43% of trainees correctly identified the high threshold of confidentiality imposed on doctors. Most fellows know vicarious liability in workplace violence, the confidentiality of doctors who themselves have HIV, employer's rights, which are generally weak among trainees. 55% fellows and 48% trainees correctly identified their right to apply for involuntary admission under the Mental Health Ordinance.

81% of trainees and 90% of fellows correctly recognized and respected the competence of stable psychiatric patients for their autonomy. 29% of trainees and 52% of fellows agree that when patients are not competent to give consent, then doctors should practice for the patients' benefit, rather than seeking the relatives' opinion. 62% of trainees and 84% of fellows understand *Chester v Asfgar* (2004) in UK.

Fellows (66.3%) generally scored higher than trainees(51.7%) in the questions.

CONCLUSION:

Emergency physicians frequently encounter difficult medico-legal situations but their relevant knowledge is insufficient. Training in legal issues relevant to emergency medicine should be further improved.

W170) INTERNATIONAL FEDERATION FOR EMERGENCY MEDICINE

MODEL CURRICULUM FOR MEDICAL STUDENT EDUCATION IN EMERGENCY MEDICINE :

Cherri Hobgood¹, Venkataraman Anantharaman², Glen Bandiera³, Peter Cameron⁸, Pinchas Halpern⁴, James Holliman⁵, Nicholas Jouriles⁶, Darren Kilroy¹⁰, Terrence Mulligan⁷, Andrew Singer⁹ : 1. UNC, Chapel Hill , NC, USA. 2. Singapore General Hospital,, Singapore, Singapore. 3. University of Toronto, Toronto, ON, Canada. 4. Tel Aviv Medical Center, Tel Aviv, Israel. 5. Uniformed Services University of the Health Sciences,, Bethesda, MD, USA. 6. Akron General Medical Center , Akron, OH, USA. 7. Erasmus University School of Medicine, Rotterdam, Netherlands. 8. The Alfred Hospital Emergency and Trauma Centre, Monash University, Melbourne, VIC, Australia. 9. Canberra Hospital, Woden, ACT, Australia. 10. College of Emergency Medicine, London, United Kingdom.

BACKGROUND: There is a critical and growing need for emergency physicians and emergency medicine resources worldwide. To meet this need, physicians must be trained to deliver time-sensitive interventions and life-saving emergency care. Currently, there is no internationally recognized, standard curriculum that defines the basic minimum standards for emergency medicine education. **DISCUSSION:** To address this deficit, the International Federation for Emergency Medicine (IFEM) convened a committee of international physicians, health professionals and other experts in emergency medicine and international emergency medicine development, to outline a curriculum for foundation training of medical undergraduates in emergency medicine. This curriculum document represents the consensus statement of this committee. The curriculum is designed with a focus on the basic minimum emergency medicine educational content that any medical school in the world should be delivering to its students during the undergraduate years of training. The curriculum is designed not to be prescriptive, but to assist educators and emergency medicine leadership in advancing physician education in basic emergency medicine content. The content would be relevant not just in communities with mature emergency medicine systems, but also in developing nations or in nations seeking to expand emergency medicine within current educational structures. We anticipate that there will be wide variability in how this curriculum is implemented and taught reflecting the existing educational milieu, the resources available, and the goals of the institutions' educational leadership.

W171) Teamwork Training: Results of an Interinstitutional Interdisciplinary Collaboration : Susan Promes², Cherri Hobgood¹, Karen Frush², Gwyn Sherwood¹, David Hollar¹, Susan Sawning¹, Laura Maynard², Donald Woodyard¹, Bev Foster¹, Melanie Wright², Jeffrey Taekman² : 1. UNC, Chapel Hill , NC, USA. 2. DUKE University , Durham , NC, USA.

INTRODUCTION: We conducted a randomized controlled trial of four pedagogical methods commonly used to deliver basic teamwork training and measured the effects of each method on the acquisition of student teamwork knowledge, skills, and attitudes. **METHODS:** We recruited 203 senior nursing students and 235 fourth-year medical students (total N = 438) from two major universities for a one-day interdisciplinary teamwork training course. All participants received an introductory didactic lecture and then were randomly assigned to one of four educational methods: didactic (control), audience response didactic, role play, and human patient simulation. Student performance was assessed for teamwork attitudes, knowledge and skills before and after the teamwork training using: (a) a 36-item teamwork attitudes instrument

(CHIRP), (b) a 12-item teamwork knowledge test, (c) a 10-item standardized patient (SP) evaluation of student teamwork skills performance, and (d) a 10-item modification of items from the Malec et al. (2007) Mayo High Performance Teamwork Scale (HPTS). RESULTS: All four cohorts demonstrated improvement in teamwork attitudes ($F_{1,370} = 48.7, p = .001$) and knowledge ($F_{1,353} = 87.3, p = .001$) pre-to-posttest. No pedagogical method appeared superior for attitude ($F_{3,370} = .325, p = .808$). or knowledge ($F_{3,353} = .382, p = .766$) acquisition. Teamwork skills were unchanged for all methods ($F_{3,18} = 2.12, p = .134$). CONCLUSIONS: Each of the four modalities demonstrated significantly improved teamwork knowledge and attitudes but no modality was demonstrated to be superior. Accurate measurement of teamwork skill continues to prove difficult. Institutions should feel free to utilize educational modalities which are best supported by their resources to deliver basic interdisciplinary teamwork training.

W172) Peer-mentored ultrasound training trial : Kelly Jeppesen¹, Jared Bailey¹, Ian Stehmeier¹, Erika Kube¹, David Bahner¹ : 1. Erika Kube, The Ohio State University Medical Center, Columbus, OH, USA.

INTRODUCTION: Bedside ultrasound (US) has been shown to shorten the time to diagnosis of critical illness. One potentially life-saving emergency application of US is the Trinity Hypotensive Protocol (THP), which is used to aid in the diagnosis of undifferentiated hypotension. Since US is heavily operator-dependent, hands-on experience through mentored training is likely to provide the best educational value. However, regular one-on-one mentoring of medical students by faculty would be burdensome. This randomized, controlled trial was designed to evaluate the effectiveness of student-to-student mentoring in training basic US techniques and the THP to first year medical students (MS1) by fourth year medical students (MS4). METHODS: Ninety MS1's were enrolled into the study and randomized to either early intervention or late intervention. All students were given a preliminary survey, recognition quiz and one-hour lecture. The early intervention group then received educational intervention while the second group did not. All students were then given a recognition quiz, after which the late intervention group received their intervention. This was again followed by a recognition quiz and faculty lecture. At the termination of the study, both groups took a graded practical exam and did a follow up survey. RESULTS: Quiz scores in the early intervention group improved from 27% at baseline to 59% after the intervention, whereas the late intervention group improved from 32% to 39% during the time without intervention. The absolute difference of improvement between the groups was 29%. On average, participants achieved 31% higher quiz scores after intervention. At follow-up, the early intervention group retained a mean of 94% of knowledge gained during intervention. CONCLUSIONS: Principles and techniques of basic US and THP can be effectively taught to MS1's by MS4 mentors. It is expected that MS1's will benefit from senior mentoring in US as they enter their clinical years of training. Programs that seek to teach US to their students are encouraged to teach senior mentors, who can subsequently teach their peers.

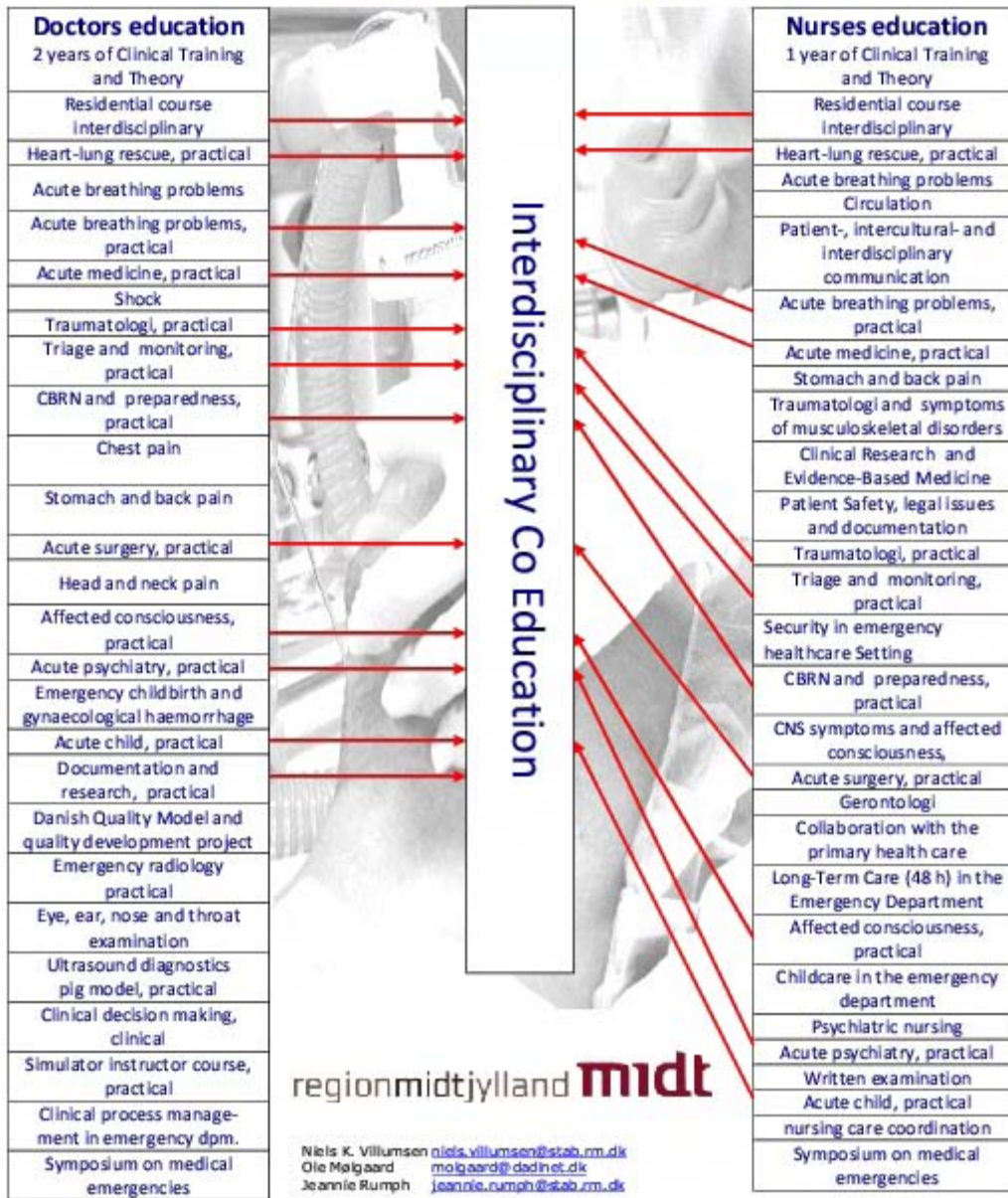
W173) Emergency Medicine Interdisciplinary Training and Education : Niels K. Villumsen¹, Jeannie L. Rumph¹, Ole Moelgaard¹ : 1. Koncern HR, Efter- og Videreuddannelse, Region Midtjylland, Aarhus N, Denmark.

Parallel simulation based education in emergency medicine designed for doctors and nurses in
Region Midtjylland, Denmark

Emergency Medicine Training and Education in Region Midtjylland, Denmark

Parallel education in emergency medicine
designed for doctors and nurses

Clinical Simulation Based



W174) Undergraduate Medical Education as Affected by Hurricane Katrina : Deborah E. Sibley¹, Lala M. Dunbar¹, Terrence Duffy¹, Jennifer Avegno¹ : 1. Medicine/Emergency Medicine, LSU Health Sciences Center, New Orleans, LA, USA.

INTRODUCTION: Hurricane Katrina greatly changed medical education in New Orleans. This study documents events and measures taken to restore medical education through ingenuity. **METHODS:** Information from the 2 medical schools in the city, Tulane University Medical Center (TUMC) and LSU Health Sciences Center (LSUHSC) was obtained. Testimonies from faculty, students, and residents provide insight of what was implemented and how. **RESULTS:** TUMC undergraduate students numbered 624 pre-Katrina. 18 of these took leave or transferred. One year post-Katrina (2006-07) the number dropped to 604. Applicants decreased from 6861 pre-Katrina to 6799 the next year. TUMC arranged with Baylor College of Medicine in Houston, Texas for the continued education of their students. LSUHSC undergraduate medical students, pre-Katrina, was 692. 9 students took leave or transferred. The number was up to 691 the next year. Applicants increased from 925 pre-Katrina to 1005 one year later. Most LSU medical students and faculty relocated in Baton Rouge. They were able to hold classes and set up faculty offices at the LSU main campus and the Pennington Biomedical Research Center. 3rd and 4th year students were allowed to conduct their rotations at Earl K. Long Hospital in Baton Rouge and University Medical Center in Lafayette. Cruise ships were brought into Baton Rouge to house students, faculty and staff. In the absence of operative telephone lines, alternate communications were text messaging, e-mails, and even new internet methods such as facebook and myspace. Once communication was established, the next task was to find a temporary place to continue the education of the students. Some of the students chose to stay, conduct their clinical rotations, and treat patients in tents that were provided by the U.S. military and MCLNO. **CONCLUSIONS:** The city suffered much damage as did the medical schools. Yet, in light of the disaster, the medical students' education still remained a priority and largely unchanged. The 2 medical schools owe a deep gratitude to help from outside sources and the faculty. The quality of the education received may actually have exceeded that of normal times.

W175) EM Standard Letter of Recommendation can Predict Intern Performance : Michael E. Silverman¹, Brian Walsh¹, Chris Amato¹, Colleen Mayer¹, Paul Szucs¹, Richard D. Shih¹ : 1. EM, Morristown Memorial Hospital, Morristown, NJ, USA.

INTRODUCTION: Emergency Medicine (EM) residency applications consist of many items that are used to assess the applicant. One of these, the letter of recommendation, has evolved over the past several years. The EM Standard Letter of Recommendation (SLOR) has become the most commonly used letter of recommendation for EM applicants. Little information exists regarding how well the SLOR predicts resident success. **Objective:** To assess the ability of the

SLOR from to predict EM resident success. METHODS: All Intern SLOR forms sent via ERAS were reviewed. When multiple SLORs were available for an individual intern the scores were averaged. The following 2 questions were scored from 1-4, 4 being strongest and 1 being weakest. "Compared to other EM residency candidates you have recommended as such last academic year, this candidate is ranked as (RANK)," and "How highly would you estimate the candidate will reside on your match list (ML)?" Interns were then evaluated by eighteen attendings on 4 categories at 6 months into their residency training. They were assessed on their history taking (Hx), physical exam (PE), interpersonal skills (IS) and overall rating (OA). All responses were collected using a 100 mm visual analog scale (VAS), 0 = worst intern ever and 100 mm = best intern ever. Two faculty members reviewed all data. The RANK and ML were correlated with resident performance. RESULTS: Data was collected on all 7 EM interns. One of the interns did not have any SLOR letters of recommendation. Overall, intern performance was rated fairly high (individual VAS scores from 65-80). Correlating SLOR rankings with performance, for overall intern performance ML ($r = 0.754$) correlated better than RANK ($r = 0.573$). The correlation for interpersonal skills was also very good for both ML ($r = 0.708$) and RANK ($r = 0.708$). Correlations for the remaining variables were not particularly strong. This included ML and RANK with both physical examination and history taking. CONCLUSIONS: The SLOR form category of "How highly would you estimate the candidate will reside on your match list (ML)?" correlates well with EM intern overall performance.

W176) Emergency Medicine in Spain: A Perspective from Barcelona : Christopher R. Tainter¹, Elaine Rabin¹ : 1. Emergency Medicine, The Mt. Sinai Hospital, New York, NY, USA.

INTRODUCTION: Emergency Medicine (EM) is recognized as an independent specialty in more than 30 countries worldwide and this number is growing. The Spanish Emergency Medicine Society (SEMES) is leading a movement to establish EM as a specialty with specific residency training in Spain. OBJECTIVE: To understand the attitudes of Spanish physicians currently practicing Emergency Medicine towards the establishment of Emergency Medicine as a specialty in Spain. METHODS: Key informant interviews were conducted at 3 major hospital centers in Barcelona. Responses were collected from 10 individuals, including 3 medical directors, 4 ED staff members, 2 residents (anesthesia and internal medicine), and a former director of Emergency Medical Services. RESULTS: All respondents stated that the establishment of an EM specialty would benefit emergency care. Current problems were cited: overcrowding (8 respondents), inpatient boarding (6 respondents), and lack of motivation for staff and residents trained in other specialties (5 respondents). Five respondents suggested that morale would improve with more EM specialists and fewer off-service providers. Seven preferred the idea of an integrated department compared to the current system (separate medical, surgical, and traumatological areas). CONCLUSIONS: These key informants in the Emergency Medicine community in Barcelona strongly support the creation of a specialty in Emergency Medicine in Spain. Thus, attempts to establish EM as a specialty there may not face resistance from those in other specialties who currently practice EM. Though key informants at several hospitals in a large metropolitan area were surveyed, the study was limited to this select population. Further investigation into opinions from other specialties and other institutions is warranted. Additionally, it may be enlightening to examine the spectrum of job satisfaction

among EM physicians from differing specialty training programs.

W177) International Academic Emergency Medicine Development: Emergency Medicine International (EMI) Fellowship : Amy L. Marr¹, Mohamud Daya¹, Ross Bryan¹, Patrick Brunnett¹ : 1. Emergency Medicine, Oregon Health & Science University, Portland, OR, USA.

INTRODUCTION: EM continues to grow as an international specialty, and with more than 30 countries developing focused EM training, support of international physician education is imperative. We propose the EMI fellowship as a systematic model for the academic and experiential training of future leaders. **METHODS:** This program is a result of interest in academic EM and our responsibility as an educational institution. A review of current literature on EM development internationally was performed and weaknesses assessed. Based on this, the goals for EMI are provision of education in: leadership (administrative skills, residency development, and national coordination), EMS and trauma systems (coordination and responder training), and research instruction (clinical and public health). The EMI structure is organized around four blocks: 1) EM clinical rotations, 2) EMS/Trauma systems experience, 3) Sub-specialty exposure (toxicology, public health, research principles), and 4) EM Operations/Administration. All components of the fellowship are tailored to the training background and interests of participants (ie, education methodology or departmental operations such as quality improvement and faculty development). Overlying all blocks is education in evidence-based practice of medicine. **RESULTS:** Assessment of the program includes pre/post-survey completion by participants and yearly post-fellowship contact tracking the development of EM in their country. **CONCLUSIONS:** While organizations of different types can assist in other ways, only academic EM can help to appropriately grow and mentor faculty for expansion of the specialty worldwide.

W178) Re-training Physicians for Global Health : Amy L. Marr¹, Mohamud Daya¹, Andrew Harris¹, Kevin Winthrop¹ : 1. Emergency Medicine, Oregon Health & Science University, Portland, OR, USA.

INTRODUCTION: The World Health Organization (WHO) recently called for increased investment in primary healthcare to reduce the global burden of disease. This proposal requires local healthcare provider investment in public health and clinical interventions worldwide. Groups seeking such involvement in global health include senior-career and sub-specialty physicians. We implemented and evaluated a training course targeted to the needs of these individuals.

METHODS: We surveyed Oregon physicians aged 46-69 to assess their additional training needs in global health. We then developed a pilot curriculum, Physician Training in Global Health (PTGH), held at Oregon Health & Science University Winter 2008. The 10-week curriculum: 1) minimally interrupted practice with 20 days training, 2) gave clinical training in emergency, primary care and obstetrics, and 3) provided a background in public health and infectious disease. Course effectiveness was determined by pre/post-course surveys and testing. Self-assessment surveys assessed 5 components: core competencies, cultural awareness, primary care skills, public health knowledge, and ability to provide international healthcare. Participants assigned themselves numeric scores on each of the five components above (1='not

aware' to 6='very aware'). Testing was done pre/post-course using a 30 question multiple choice exam developed by the authors. RESULTS: As survey results showed 88.1% of responders expressing an interest in global health and 75.8% in a training course, the PTGH curriculum was developed. Effectiveness was demonstrated with 2 elements: 1) pre/post-course surveys that showed an average increase of 1.6 points/person to an average competency score of 5, and 2) pre/post-course testing where results averaged an increase of 7.5 points/person (range 3-13) to 23.5 total (range 21-25). CONCLUSION: Advancing health globally requires policy and systems coordination internationally and local involvement of healthcare providers. There is a high level of interest and need for additional training in this area among senior career physicians, and our pilot course appears to both enhance skills and meet this need.

W179) Improving Patient Safety in Emergency Situations through Multi-disciplinary Human Patient Simulation Training : Libby Thomas¹, Peter Jaye¹ : 1. Simulation , Guys and St Thomas' Trust, London, n/a, United Kingdom.

Introduction

The British Chief Medical Officer recently recognised the importance of simulation in addressing the deficiencies in medical education that lead to medical error and thus compromise patient safety. Crisis Resource Management (CRM) was highlighted as one of the prime learning outcomes to address. We have designed a multidisciplinary course to address patient safety in the Emergency Department using human patient simulation to draw attention to CRM.

Method

This multi-disciplinary course was planned around learning outcomes based on the top 5 issues from our hospital trust patient risk register. We designed scenarios based on Serious Untoward Incidents. They illustrate CRM, particularly leadership and followership. We put these scenarios into a monthly course for twelve emergency department doctors and nurses (six of each) of all levels and included two small group sessions on CRM. All participants filled in a pre- and post-course questionnaire.

Results

The ratio of staff trained is 53% nursing and 47% medical. There was a 142% increase in understanding of CRM (3.3–8.0/10). Self reported leadership skills improved by 21% (5.7-6.9/10) and confidence in managing emergency situations improved by 21% (5.8-7.0/10). 83% of attendees had only positive feedback for the course.

Responses to 'What is one thing you will take away from this course?' include:

- Importance of effective team working and communication
- How to manage and communicate in stressful situations
- Organised, calm reflective leadership and followership

Conclusions

The course has been well received and is now fully booked for the next 6 months. We have addressed the learning outcomes we have set out and we hope that in time we will see significant changes in patient safety culture within our department (study ongoing) that lead to

improvements in mortality and morbidity data.

It is possible to design a multi-disciplinary course using simulation that addresses real patient safety issues pertinent to every emergency department.

W180) Conscious Sedation: Is learning enhanced by integrating human patient simulation into a conscious sedation course? : Libby Thomas¹, Peter Jaye¹ : 1. Simulation , Guys and St Thomas' Trust, London, n/a, United Kingdom.

Introduction

Conscious sedation is considered to be an important fundamental aspect of the modern practice of medicine. It benefits hospitals by reducing overnight admissions. In our trust we recognised a lack of formal teaching in conscious sedation so designed a multi-departmental course to address this. We initially taught the course without simulation (course A) and then with (course B) it to see if it enhanced learning.

Methods

This course was based on a dental conscious sedation course that has been running successfully for many years. The course A ran on a lecture basis interspersed with more interactive sessions to address consent, recovery and sedation in different realms of practice. The course B used similar content but also included 2 human patient simulation scenarios to put the theory into practice. Everyone filled in a pre and post-course MCQ, same questions on both papers, and a post course questionnaire. We are aiming to re-examine all attendees with the same MCQ paper 2 months post course to assess retention of knowledge.

Results

11 people (4 x anaesthetics, 2 x ED, 5 x foundation trainees) attended course A, 10 people attended course B (2 x anaesthetics, 4 x ED, 4 x foundation trainees). Course A had 63% very positive feedback and course B 60%. 100% of course B stated they particularly like the simulation scenarios.

Initial results show an average increase in MCQ scores on both courses. (9.6% increase course A, 37 – 40.5/50, 8.3% course B 36.1 – 39.1/50). We have yet to repeat the MCQ as 2 months is not yet up but will be complete for conference.

Conclusion

The course has been well received by specialities partaking. We have addressed the initial learning outcomes and we hope that as the course is rolled out to see improved safety and consistency in conscious sedation practice across the trust.

The use of simulation enhances the learning experience in a conscious sedation course and we hope results will show it increases retention of knowledge and skills.

W181) New roles in the resuscitation room: evaluation with a Delphi consensus study : Katja Empson¹, Rachael S. Boddy², Matthew W. Cooke³ : 1. Heart of England NHS Foundation Trust, Birmingham, West Midlands, United Kingdom. 2. Alexandra Hospital, Worcestershire Acute Hospitals NHS Trust, Redditch, Worcestershire, United Kingdom. 3. Warwick Medical School, University of Warwick, Coventry, West Midlands, United Kingdom.

INTRODUCTION: Problems with recruitment and retention of nursing staff in a busy urban ED required a novel approach to staffing the resuscitation room and hence a role for operating department practitioners (ODPs) working in the ED was created. ODPs are valued members of the operating theatre team with skills in maintaining and restoring the physiological status of high dependency patients. The resuscitation room of a busy ED is an obvious environment where these skills could be put to good use and so the new role of emergency department practitioner (EDP) was created. **METHODS:** A three stage Delphi approach study was undertaken. The Delphi process is an accepted research method to determine the extent to which a group agree on an issue. In the first stage 35 questionnaires were sent out to ED and ITU consultants and ED nursing staff who had worked in the ED at Birmingham Heartlands Hospital before and after the introduction of EDPs. Statements relating to the EDP's impact in the ED were constructed from this first stage. In the second stage the same people were asked to agree or disagree with each statement on a scale of 1 to 9. Finally in the third stage the statements were redistributed with a summary of the stage 2 responses. **RESULTS:** 26 of 35 (74%) questionnaires were returned. 12 statements covering the broad topics of maintenance and stocking of equipment, care and safety of patients, and the impact of EDPs on the role of the nursing staff were constructed. 25 of 35 (71%) responses have been received into round two. There was agreement that EDPs led to improvements in the maintenance and availability of equipment (92%); monitoring and recording of observations (84%) and facilitated a safer approach to the airway management of critically ill patients. 80% also agreed that EDPs had led to improved safety in patient care, invasive monitoring, care of the intubated and ventilated patient and in transfer of critically ill patients. **CONCLUSION:** This Delphi study of the new EDP role in the resuscitation room provides good evidence that staff perceive the EDP as a valuable member of the emergency department multidisciplinary team.

W182) Human Factors Engineering Intervention to Improve Emergency Department Physical Chart Location, Identification and Differentiation for Enhanced Patient Safety : Leo Kobayashi¹, Robert M. Boss², Frantz J. Gibbs³, Eric J. Goldlust³, Michelle M. Hennedy², James E. Monti³, Nathan A. Siegel³, Gregory D. Jay³ : 1. Rhode Island Hospital Medical Simulation Center (RIHMSC), Providence, RI, USA. 2. Emergency Department, Rhode Island Hospital, Providence, RI, USA. 3. Department of Emergency Medicine, Alpert Medical School at Brown University, Providence, RI, USA.

INTRODUCTION: Medical records and related processes can present a challenge to patient safety in the Emergency Department (ED). Investigators studied the focused application of human factors engineering (HFE) principles to improve an ED physical chart system. **METHODS:** A multicolor-coded chart binder system with ED room/region location specificity was designed and implemented to replace existing chart binders. Binders for patients in

adjacent rooms were made easily distinguishable by color; different color groups were featured for distinct ED clinical areas and nursing assignments. Pattern recognition schemes were employed to prevent chart swapping within ED units and to highlight unintended cross-unit chart transfers. Objective measurements of incorrectly stored charts were completed prior to and after implementation. IRB exemption was obtained. RESULTS: The HFE-modified chart binder system was deployed for 83 individual ED patient care spaces over one month; 10 pre-intervention and 10 post-intervention random audits were conducted. Prior to intervention, 56 (9.8%) of 573 chart binders checked were determined to be incorrectly placed in chartrack or at significant risk of being easily confused with another patient's, whereas the HFE-revised system had 12 (2.0%; $p < 0.01$) of 604. Significant reductions in chart binder location problems were detected for Urgent Care (6.4% to 1.2%; $p < 0.05$), Fast Track (19.3% to 0.0%; $p < 0.05$) and Psychiatric Care (15.7% to 0.0%; $p < 0.05$) areas of the ED. The Critical Care area did not display an improvement (11.4% to 13.2%; $p = 0.40$), likely due to the two-patients-per-room configuration generating sidedness issues. CONCLUSIONS: HFE principles were applied to an existing ED chart medical record system to improve providers' ability to better locate, identify and differentiate patient medical records. Chart misplacement was significantly reduced in several ED areas; further work is necessary to address specific ED areas with unique confounding characteristics.

	average # patients	% binders in incorrect location
<ul style="list-style-type: none"> ED (overall) <ul style="list-style-type: none"> pre-implementation: 57 post-implementation: 60 	57 60	9.8% 2.0% $p < 0.01$
<ul style="list-style-type: none"> Critical Care <ul style="list-style-type: none"> pre-implementation: 7 post-implementation: 7 	7 7	11.4% 13.2% $p = 0.40$
<ul style="list-style-type: none"> Urgent <ul style="list-style-type: none"> pre-implementation: 30 post-implementation: 32 	30 32	6.4% 1.2% $p < 0.05$
<ul style="list-style-type: none"> C pod <ul style="list-style-type: none"> pre-implementation: 13 post-implementation: 12 	13 12	19.3% 0.0% $p < 0.05$
<ul style="list-style-type: none"> D pod <ul style="list-style-type: none"> pre-implementation: 11 post-implementation: 10 	11 10	15.7% 0.0% $p < 0.05$



W183) Developing the role of emergency department physicians in the management of alcohol withdrawal : Omar Touma¹, Alister McIlwee¹, Jill Stafford¹, Eileen Hutson¹, Charlie Martyn¹ : 1. The Ulster Hospital , Belfast, United Kingdom.

INTRODUCTION: Excessive alcohol consumption is a major problem in modern society. Alcohol related problems result in a large number of emergency department (ED) attendances. Many of these patients require secondary detoxification as part of their initial management. We describe our experience in providing alcohol detoxification to patients with alcohol withdrawal as a short stay admission in the ED observation ward. Our trust has employed an alcohol Liaison Nurse to assist in the management of alcohol related acute admission, and provide continuity of care to such patients in the community after discharge. Withdrawal severity scale has been implemented into the ED practice in order to assess possible alcohol withdrawal patients. ED Staff members have been trained to quantify the severity of alcohol withdrawal syndrome and deliver symptom-triggered treatment of alcohol withdrawal. **METHODS:** We collected data on length of stay of patients with alcohol withdrawal requiring detoxification admitted to the ED observation ward and to the acute medical wards between Jan 2005 and Jan

2009. RESULTS: The number of patients admitted to the ED observation ward was 231. The number of patients managed on the medical wards was 334. Comparing in hospital length of stay of these two patients groups, there was significant difference in the length of stay of patients admitted to the ED observation ward (average 1.15 Days) compared to the length of stay of patients admitted to the medical wards (average 7.02 days). CONCLUSION: Although patients admitted to the medical ward may have more severe alcohol withdrawal symptoms or concomitant medical illnesses, we believe our practice of providing timely assessment and protocol driven management for such patients within the ED department observation ward improves patients' outcome in term of reduction in hospital length of stay and reduction in the incidence of alcohol withdrawal complications. Early discharge of alcohol dependent patients to the care of the community alcohol team allows early initiation of the alcohol dependence treatment and optimises the likelihood of achieving long-term abstinence.

W184) Death with Dignity in the Emergency Department : Angel Estella¹, Jesus Salguero¹, Ruth Viciano¹, Antonio Jareño¹ : 1. Emergency Department. Hospital SAS Jerez, Jerez, Spain.

INTRODUCTION: Overcrowding of the Emergency Departments (ED) is a common situation in the hospitals in the last years. A priori, from the point of view of patients comfort and intimacy, the observation unit (OU), an area with many patients and visiting times limited, is not the ideal installation for receive healthcare during the final stage.

OBJECTIVE: To assess the implementation of a program of health care during the end of life in terminally ill patients admitted in the ED. To describe the clinical characteristics and conditions of patients died in the Observation Unit (OU). METHODS: Frequently, stays in OU is delayed pending admission in a medical ward. An educational program on health care during the end of life in terminally ill patients addressed to doctors and nurses was developed.

Consecutive terminally ill patients who were admitted and died in OU pending admission in a medical ward between January and March of 2009 were included in analysis. Age, gender, medical history, diagnosis and quality of life were recorded. The setting of the OU, need for psychological and spiritual support and accompanying when dying were analyzed. RESULTS: 23 patients were included during the period of study, 11 men and 12 women. Mean age was $79,8 \pm 12,6$ years. 52% were referred to the hospital by emergency ambulance transportation. 82,6% had a limited activity of daily living and a 56,5% were confined to bed. Respiratory failure was the most common diagnosis at admission, 17,4% had a terminal cancer. All the patients were admitted in a sideroom of the OU adapted to offer a dignified setting for these patients. We contacted the busy medical wards to speed up the admissions. Treatment of physical pain and other symptoms was achieved and psychological and spiritual support was offered, all the patients died being accompanied by their family members. CONCLUSIONS: The

ED is not a suitable healthcare installation for death with dignity in terminally ill patients. An effort to adapt this setting to offer high quality palliative care was necessary. In our experience this approach was appreciated by the family of terminally ill patients.

W185) Limitation of therapeutic effort and comfort measures at the end of life in an emergency department : Silvia Minguez¹, Maria Jesus Lopez¹, Francisco del Baño¹, Susana Sanchez¹, Jose Luis Echarte¹, Alfons Aguirre¹, Isabel Campodarve¹, Elias Skaf¹ : 1. Emergency Department, Hospital del Mar, Barcelona,

Barcelona, Spain.

INTRODUCTION: At the present time, an increasing number of deaths take place in the emergency department (ED), ranging between 0.2-0.9% of all patients attended, mainly in relation to sociocultural changes, increased technification of medicine, and institutionalization of death. This means that physicians in the ED are faced with a limitation of therapeutic effort (LTE), which may account for up to 50% of patients who died in the ED. **Objectives:** To describe in how many patients a decision of LTE was taken during the patient's care in the ED and whether pharmacological comfort measures were required. **METHODS:** A retrospective study of patients who died in our ED and who, at the moment of death, were cared by our ED staff between January 1, 2007 and June 30, 2007. Demographic data, LTE, use of pharmacological comfort measures, presence of a terminal stage disease, comorbidity and advanced cardiopulmonary resuscitation were recorded. **RESULTS:** During the study period a total of 35,088 were attended, 100 of whom died in the ED (0.3%). The staff medical team of the ED directly cared for 58 patients, whereas the staff of other medical and surgical specialties cared for the remaining patients. The mean age was 79.9 ± 11.9 years. Comorbid conditions were present in 52 patients (89.7%). Cardiopulmonary resuscitation was performed in 8 patients (13.8%). 19 had dementia (mild 4/moderate 2/severe 13) and 18 had a terminal illness (31%). LTE was applied in 38 patients (65%), 32 withholding (84%) and 6 withdrawing (15.7%). Pharmacological comfort measures were required in 51.7% (30). These measures were only applied to patients in whom LTE was previously considered. **CONCLUSIONS:** LTE is applied to a non-negligible number of patients who died in the ED, withholding of treatment accounted for the large number of cases. Continuous care of the patient may require occasionally the use of pharmacological comfort measures. Knowledge of these circumstances will allow improving the patient's care by anticipation of the measures needed. Protocolization of care for these patients will be recommendable.

W186) Recombinant Human Hyaluronidase-Facilitated Subcutaneous Fluid Administration Techniques : George Harb¹, Hwei-Chun E. Chou¹, Christine Syltevik¹ : 1. Baxter Healthcare Corporation, New Providence, NJ, USA.

INTRODUCTION: The Increased Flow Utilizing Subcutaneously Enabled Administration Technique (INFUSE AT) study evaluated techniques for recombinant human hyaluronidase (rHuPH20)-facilitated subcutaneous (SC) fluid administration. **METHODS:** In a randomized, parallel-group, open-label trial, healthy adult volunteers were randomly assigned to 1 of 9 SC infusion techniques. Variations included Smith's Medical JELCO® catheter gauge, catheter material, and securement method; 1 treatment group used a Medtronic Sof-set Ultimate QR SC button delivery system. All subjects received 1 mL rHuPH20 (150 U) SC via an infusion set in the anterior thigh, followed by 1000 mL Lactated Ringer's delivered SC via a Baxter COLLEAGUE Single Channel Volumetric Infusion Pump, Model CXE 2M9161, over 7 to 10 hours at 200 mL/hr for the first 2 hours, then 125 mL/hr until complete. Technical challenges (TCs) included catheter kinking; catheter dislodgement/pullout; and infusion pump alert/failure. Ease of use assessments included time for catheter placement; number of needle insertion attempts; and interruptions or flow-rate reductions. Safety and tolerability were based

on infusion-site reactions and adverse events (AEs).

Results: One hundred volunteers (62 males, 38 females; mean age, 34.5 years) were enrolled. TCs were reported in 21 subjects; proportion with ?1 TC was comparable across treatment groups (Table 1). The most frequent TC was pump alert (9% – 27% of treatment groups). Median time from infusion start to first TC report was 1.3 – 5.2 hours, across groups. Successful SC access was achieved on first attempt in all but 2 subjects (2 attempts each). Across groups, median time to catheter placement was 9 – 48.5 seconds. TC-induced flow interruptions occurred in 20 and flow reduction in 1 subject. Mean interruption duration/individual was 1 – 6.5 minutes. At least 1 AE was reported in 46% – 91% of subjects. AEs were mild, except in 2 subjects who reported moderate to severe AEs; 1 serious AE (ureteral calculus) was not considered drug-related.

Conclusions: TCs—reported in up to 27% of subjects—were comparable across administration techniques.

Table 1. Summary of Technical Challenges During Fluid Infusion by Treatment Groups

Technique	Catheter Kinking n (%)	Catheter Dislodgement n (%)	Catheter Pullout n (%)	Infusion Pump Alert n (%)	Number of Subjects With Any TC n (%)
24 gauge catheter Teflon tubing Tegaderm securement (N=10)	0	0	0	2 (20.0)	2 (20.0)
24 gauge catheter Teflon tubing Tape double-chevron securement (N=11)	1 (9.1)	0	0	2 (18.2)	3 (27.3)
24 gauge catheter Polyurethane tubing Tegaderm securement (N=11)	0	0	0	2 (18.2)	2 (18.2)
24 gauge catheter Polyurethane tubing Tape double-chevron securement (N=10)	2 (20.0)	1 (10.0)	0	1 (10.0)	2 (20.0)
20 gauge catheter Teflon tubing Tegaderm securement (N=12)	0	0	0	2 (16.7)	2 (16.7)
20 gauge catheter Teflon tubing	0	0	0	2 (16.7)	2 (16.7)

Tape double-chevron securement (N=12)					
20 gauge catheter Polyurethane tubing Tegaderm securement (N=12)	0	1 (8.3)	0	3 (25.0)	3 (25.0)
20 gauge catheter Polyurethane tubing Tape double-chevron securement (N=11)	2 (18.2)	0	1 (9.1)	1 (9.1)	2 (18.2)
27 gauge, 9 mm button SC delivery system (N=11)	0	0	0	3 (27.3)	3 (27.3)

Abbreviations: SC, subcutaneous; TC, technical challenge.

W187) Public Awareness about Attending the Emergency Department : Muhammad A. Majeed¹, Ashes Mukherjee¹ : 1. Russells Hall, Dudley, United Kingdom.

INTRODUCTION: Objectives: 1. What do people think about going to ED? 2. How much general awareness is there about the Emergency department? 3. Are the people sufficiently guided by different services when to attend the ED? 4. Do we need to educate the people about the ED? METHODS: We circulated a questionnaire among the patients who attended the ED with minor problems and were discharged home. We collected 100 sheets. RESULTS: see tables. DISCUSSION: This is quite evident from the above results that we all (doctors, nurses, GPs, pharmacists, NHS direct) need to regularly educate the public about what an emergency means and coming to the ED just for second opinion or for some health issues which they have had for a while is not a good choice as it can affect the treatment of really sick patients in the department. We can see that people are not making enough use of the other services and then they don't want to wait that long, therefore many of the people call 999 for an ambulance but this does not mean that they will be seen quicker when they arrive at Accident and Emergency (A&E). All patients are seen on the basis of medical need. We need to make sure that we convey this message to our communities that "999 is for emergencies only" and a trip to A&E should be a last resort, as A&E should only be used in real emergencies. "Therefore they should be advised to think carefully whether or not their condition/illness is an emergency, as it may be preventing others with life threatening conditions from getting immediate care A&E is not an alternative to a GP. A&E is for accidents, emergencies and serious illnesses only." We need to emphasize this message to off load the increasing influx of patients with there own

help.

results

	yes	no
You come to ED for an emergency or any health issue	41%	25%----
You think you could see your GP for this	66%	34%
You think you could wait for GP appointment	16%	84%
You think you could wait for 4hrs in ED	66%	34%
You think you needed seeing urgently	66%	34%
You were advised by GP to attend ED	25%	75%
You were advised by NHS direct to attend ED	34%	66%

W188) **The Use of Social Network Services For a New Level of Fast Alert Communication on a Regional or National Basis** : **Christophe R. Laurent¹**, **Katrijn Van de Vijver²** : **1. Emergency and Disaster Medicine, Onze-Lieve-Vrouw Research Center Aalst, Antwerp, Belgium. 2. University Hospitals Leuven, Leuven, Belgium.**

BACKGROUND: Social networks such as Facebook and Twitter, are used increasingly by organisations to broadcast and communicate messages and facts with as many parties as possible, in an "on demand" fashion, as people have to "follow" them or subscribe to the feed. This way, anyone is simply better informed when following the A(H1N1) messages with internet links from the CDC, the WHO and others on Twitter, and has better access to new information. In fact, the result is one-way information, not towards a specific recipient of the information. The internet has been shown to be a source of information for monitoring outbreaks, by using algorithms on search engine queries. **DISCUSSION:** In completely different environments, an orchestrated use of social networks between the sources and the recipients of information, led to new ways of efficient and constructive communication. In a town with multiple EDs, the presentation of 5 to 10 cases of gastroenteritis or airway infections per day in one ED would not be automatically categorised as suspect. If however, the same rise in this pathology should happen in several EDs, this would be something that could very well be of greater importance. Today this is not being institutionally tracked in Belgium on a daily basis. It would therefore seem very necessary (even inexcusably so) to form an open or closed forum, in which to discuss the symptoms, syndromes or diseases that need to be monitored, and the frequency that reporting them would be relevant. Every ED could report daily the number of airway instructions, gastro-enteritis, sepsis, meningitis anonymously on this forum. It would not be necessary for all parties to participate in this effort to make such information useful, and who accesses and/or processes the information does not need to be relevant immediately. A one-line string of information can be broadcast on a closed Twitter Group that contains coded letter and number combinations and communicate all the diseases that are to be monitored. The sheer existence and sharing of the data will quickly generate new information and alerts, and improve healthcare.

W189) CAN WE USE A SIMPLER TRIAGE SYSTEM? : Muhammad A. Majeed¹, Ashes Mukherjee¹, Kiran Bhatt¹, Ebad Hussein¹ : 1. ED, nhs, Dudley, United Kingdom.

INTRODUCTION: Objectives: Can we identify the “at risk” patients with our triage system? Comparison of our results with MEWS system? Does it have be one of the traditional systems?
METHODS: We collected notes on 100 patients who attended the major side of the ED in a single day. Among these patients there were 5 categories Priority (urgent) and non Priority (seen in time order). Patients were categorized as urgent if they had 2 or more changes as outlined in our departmental guidelines. Then we scored them according to the MEWS system and compared the results. We looked into any possible issues regarding delays that were evident from the notes. **RESULTS** (table). **CONCLUSION:** The triage system used by Russell's Hall Hospital A&E department categorized the patients into two groups: priority (urgent) and non priority (seen in time order). The triage system is based on the assessment by the triage nurse where in if the patient’s state of health or anything in patient’s history concerns the nurse, the nurse would discuss it with the doctor in charge. Following the discussion the patient is then prioritized. When a patient comes to A&E with a temperature higher than 38°C degree, this does not always warrant a priority rather a quick review and re assessment is the key. This is because the patient might have spiked a temperature due to sore throat. When considering a patient for triage it is important to consider all factors in lieu with patient’s health and not depend only on one feature or symptom. During the waiting if the patient’s health deteriorates or patient has new symptoms, they would get prioritized. The results show that none of the sick patients had to wait longer than 2 hrs for which we do need to consider how busy the department was at that particular time of the day. There were no breaches. These results suggest that the triage system used by Russell’s Hall Hospital A&E is effective at not leaving any priority back even when comparing with other scoring systems. Therefore not following the systems like MTS, EWS, MEWS doesn’t mean the patients care is being affected in anyway. Limitations: Small audit; Single day sample.

Priority /non priority 5/100 Priority Patients admitted to ITU /medical high 1/5 Non Priority Patients admitted to ITU /medical high 0/95 Avr time for Non Priority 67 minsAverage time for Priority Patients 23 mins(Priority pts)Urgent according to our system 29Prioritised 5 ptsUrgent according to MEWS 2 pts

W190) Critical Patients Referred to Emergency Room Necessitating ICU admission: Spectrum, APACHE, Length of Stay and Outcome : Mostafa Alavi Moghaddam¹, Shahram Kheikhah¹, Hassan Motamed¹ : 1. Emergency Medicine, Shaheed beheshti Medical University, Tehran, Iran.

INTRODUCTION: Objective: To evaluate the spectrum of primary diagnoses, APACHE II scores, Length of stay and outcomes of critical patients admitted to the emergency room who were candidates for ICU admission. **METHODS:** A 6-month prospective study in an Emergency Room (ER), in a tertiary level teaching hospital. All critical patients who presented to our ER and during their six initial hours of arrival into ER necessitated ICU admission (according to their responsible physician’s opinion) were included. Primary diagnosis,

APACHE II score, Length of stay in ER and outcome of patients were evaluated according to a pre-defined multi-aspect questionnaire. Patients were followed until death or discharge from hospital. RESULTS: Four hundred and thirty-two patients were enrolled, among them 57 patients were candidate for ICU admission; of whom 21 patients had trauma (group 1) and 36 patients had non-trauma medical causes (group 2). The most common primary diagnosis among group 1 was Trauma-related ICH (10 patients) and among group 2 were stroke-related ICH and sepsis (each one 6 patients). Mean of Initial APACHE II score were more in group 1 than group 2 ($p < 0.001$). Range of LOS in ER before transportation to ICU was. Mean of LOS, was more prolonged in group 2 than group 1 ($p < 0.05$). In group 1, 12 patients had need for emergent operation during their first 24 hour of arrival into ER. Before transportation to ICU, 23 patients died in the ER, of whom 5 patients died during the first 24 hours. Also 21 patients died after transportation to ICU. In patients who were admitted earlier to the ICU, mortality in hospital was less than who had a longer LOS in ER ($p < 0.05$). Finally 10 patients were discharged from hospital. CONCLUSION: According to this study, among critical patients in ER who necessitated ICU, the sooner the admission in ICU; will lead to better prognosis. A critical care setting accessible in the ER, will improve the prognosis of those patients who have a long LOS in ER before transportation to hospital ICU.

W191) Acidosis in Simulated Arrest Scenarios : Donald M. Dawes¹, Jeffrey D. Ho², James R. Miner² : 1. Physiology and Biophysics, University of Louisville, Santa Barbara, CA, USA. 2. Hennepin County Medical Center, Minneapolis, MN, USA.

INTRODUCTION: The mechanisms of death in many arrest-related deaths are unclear. Some authors have opined that deaths may be related to a metabolic acidosis. In this study, we compared markers of acidosis during several simulated use of force encounters. METHODS: This was a prospective study. The subjects were a convenience sample of law enforcements officers receiving a training exposure. Subjects were randomized to one of five groups: 1) a 150 meter sprint, simulating flight, 2) 45 seconds of hitting and kicking a heavy bag, simulating physical combat, 3) a 10-second TASER X26 exposure, 4) a K-9 training exercise of approximately 30 seconds, and 5) an oleoresin capsicum (O.C.) exposure to the face. Subjects had an intravenous catheter placed by a physician or paramedic prior to the test. Baseline pH and lactate were drawn at that time and redrawn immediately after the task and every 2 minutes for 10 minutes. RESULTS: The median pH at baseline was 7.36 (range 7.28 to 7.44). The median post-task pH was lowest for the heavy bag group at 7.01 (range 6.94 to 7.18, IQR 6.99 to 7.05), followed by the sprint group at 7.16 (range 7.05 to 7.31, IQR 7.13 to 7.31). The K-9 group was next at 7.26 (range 7.30 to 7.40, IQR 7.22 to 7.31), followed by the TASER group at 7.29 (range 7.24 to 7.35, IQR 7.26 to 7.33), and lastly the oleoresin capsicum group at 7.37 (range 7.33 to 7.40, IQR 7.38 to 7.39). These differences persisted over the subsequent time points. The median lactate at baseline was 1.15 (range 0.61 to 3.55, IQR 0.75 to 2.35). The median post-task lactate was highest for the heavy bag group at 14.71 (range 8.9 to 18.7, IQR 13.7 to 17.40), followed by the sprint group at 10.98 (range 3.3 to 14.6, IQR 7.4 to 13.2). The TASER group was next at 5.49 (range 1.3 to 7.2, IQR 4.3 to 5.9), followed by the K-9 group at 5.01 (range 1.5 to 9.6, IQR 3.5 to 7.0). The oleoresin capsicum group was lowest at 1.39 (range 0.6 to 2.4, IQR 1.3 to 1.7). These differences persisted over the subsequent time points. CONCLUSIONS: The comparison of use of force encounters demonstrated that the

simulated combat produced the greatest change in acidosis markers.

W192) Catecholamines and Troponin in Simulated Arrest Scenarios : Donald M. Dawes¹, Jeffrey D. Ho², James R. Miner² : 1. Physiology and Biophysics, University of Louisville, Santa Barbara, CA, USA. 2. Hennepin County Medical Center, Minneapolis, MN, USA.

INTRODUCTION: The mechanisms of death in many arrest-related deaths are unclear. Unexplained arrest-related deaths have occurred after the use of electronic control devices. The primary concern has been direct cardiac arrhythmias. However, some authors have opined that deaths may be related to an acute stress cardiomyopathy induced by high circulating catecholamines. We compared the stress response during several simulated use of force encounters. **METHODS:** This was a prospective study. The subjects were a convenience sample of law enforcements officers receiving a training exposure. Subjects were randomized to one of five groups: 1) a 150 meter sprint, simulating flight, 2) 45 seconds of hitting and kicking a heavy bag, simulating physical combat, 3) a 10-second TASER X26 exposure, 4) a K-9 training exercise of approximately 30 seconds, and 5) an oleoresin capsicum (O.C.) exposure to the face. Subjects had an intravenous catheter placed by a physician or paramedic prior to the test. Baseline catecholamines were drawn at that time. Subjects then participated in their assigned task. Catecholamines were drawn immediately after the task and every 2 minutes for 10 minutes. Troponin was also drawn before and at 24 hours after the task. **RESULTS:** 60 subjects completed the testing. The median age was 35 (range 19 to 67), 85% were male, and the median body mass index was 27.8. For total catecholamines, there was no difference between the groups at baseline and the median pre-task was 474 (range 241 to 1348, IQR 296 to 824). Immediately after the task, the highest median was the heavy bag group at 3621 (range 1359 to 11669, IQR 3177 to 4891). The next highest was the sprint group at 2070 (range 1466 to 3606, IQR 1794 to 2518). The K-9 group was next at 1503 (range 803 to 2001, IQR 1299 to 1642). The TASER group and O.C. groups were last at 1038 (range 653 to 1363, IQR 955 to 1089) and 1032 (range 545 to 1233, IQR 736 to 1085). These differences persisted for all time points. There were no changes in troponin at 24 hours. **CONCLUSIONS:** The comparison of use of force encounters demonstrated that the simulated combat was one of the most activating of catecholamines.

W193) Emergency Services in Gaza Strip : Jesus Diaz-Guijarro Hayes¹ : 1. ER, Sheikh Khalifa Medical City, Abu Dhabi, United Arab Emirates.

The Gaza Strip is a coastal strip of land along the Mediterranean Sea. It is about 41 kilometers long and between 6 and 12 kilometers wide. Gaza strip is completely encircling by a barrier, with 2 main crossings, Erez to Israel and Rafah to Egypt. In July 2007 there was a population estimate of 1,481,000. After Hamas won the 2006 elections Israel declared The Gaza Strip a hostile entity and severed the influx of supplies inclusive medical. There are several Medical's NGOs helping on the field and due to they is not a formal medical specialties training, at least one, PCRf,(Palestine's Children Relief Fund has a project for the formation of specialist in Hand Surgery, supported by Denis Diderot Medical School de Paris. These NGOs work primarily in Shifa and Naser Hospitals, which are the two main Hospitals of Gaza strip with

Emergency department. The medical staff of the ED have to learn the specialty seeing patients without a properly program, in extremely busy conditions and with limited resources. The situation becomes critical when they received a large number of major trauma patients in a short period of time, which we know will require a large number of staff and equipment. I am going to visit the Gaza Strip Emergency departments and services in July with PCRFB. This trip is the answer of an invitation that I have received from some Health authorities of Gaza Strip and my aim is look for knowing the situation in situ. I would like to see in which way it is possible help the staff, improve their training and know their equipment necessities. As part of this help I have been asked to give advise on Major Incident plans. If the abstract is accepted my idea is doing a presentation with the information found on my visit and the possibility of develop projects to improve the Emergency Care on Gaza Strip.



Ambulance's door of Naser Hospital, Gaza strip

W196) ANALYSIS OF THE APPROPRIATENESS OF REQUESTS FOR URGENT CHEST PORTABLE X-RAY (CPRx) ORDERED IN AN EMERGENCY DEPARTMENT (ED) : Ainhoa Gonzalez Querejeta¹, Jose Ramon Aginaga¹, David Del Valle¹, Mailen Lekuona¹, Leire Bein¹, Pablo Busca¹ : 1. Hospital Donostia, San Sebastian, Guipuzcoa, Spain.

INTRODUCTION: In emergency situations the accessibility of radiological tests can take to a bad use of them. In order to avoid patient transfers to radiology rooms, sometimes, the radiology technicians are called to go to the ED for the accomplishment of the radiological tests in situ.

Nevertheless, this fact has some disadvantages that should restrict these requests to the maximum, such as difficulties for the interpretation of the x-ray or unnecessary exposure of the sanitary personnel and other patients to the radiation. Since 2006 we realized in our service a pursuit and analysis of the requests of urgent CPRx and in 2008 we established some provisional criteria of adjustment. **PURPOSE:** To analyze the characteristics of the patients and the adjustment of the requests of CPRx made based on established criteria. **METHODS:**

Retrospective study of requests of CPRx. Subjects: Patients attended in ED who had a CPRx. Study period: 2009/01/01 to 2009/04/01. Analysis of data: Age, sex, clinical data, clinical reason for the CPRx request, adjustment and destination. RESULTS: In 2006 31.700 chest x-ray (CRx) were requested, 6.45% were CPRx; in 2007 from 33.322 CRx, 5.66% CPRx and in 2008 from 33.087, 4.62% CPRx. During the study period 8.472 CRx were realized, 327 of them CPRx (4.17%) with an average of 3.63 CPRx/day. Most important: By age: ?70 to ?89 years: 56%, ?90 ys: 10%. By sex: 56% males. By groups: 42.2% had hemodynamic instability, 22.6% cardiopathies and unstable arrhythmias, 8% depressed level of consciousness and 1.8% polytraumatized. Adjustment: In 18% of CPRx the adjustment is questionable. By destination: 70% were admitted in plant; 18.7% in medical intensive care.

CONCLUSIONS: With the pursuit and analysis realized in recent years, we have sensitized and informed the ED doctors, and in spite of the increase of the total CRx requests, the percentage of CPRx has been reduced from 6.45% to 4.17%. The established criteria of adjustment include most of the requests, nevertheless, a prospective study could help to realize the definitive validation and to reduce requests even more.

W197) Audit: To determine if diagnosis recording and communication with General Practitioners is adequate : Colm McCarthy¹ : 1. Falt 2f2, Edinburgh, United Kingdom.

INTRODUCTION: A study of what GP's wish in terms of information from emergency departments suggest that the less the better – 'Most GPs preferred a small computer generated letter which included details of investigation results, diagnosis, treatment, and follow up arrangements.'. The 'TRAK' system is used in the Royal Hospital for Sick Children, Edinburgh to generate a GP letter after each patient event, requiring a diagnosis box to be filled (either from 'ICD' list or Free text) and a letter to be written as free text by the doctor.

METHODS: 4 Mondays were selected randomly over four months and analysed in retrospect to record if the diagnosis box was completed and to qualitatively group the letters into three categories A, B and C. 'A' containing results, diagnosis treatments and follow-up with minimal superfluous information (i.e. considered ideal), 'C' containing dense and excessive text which is hard to penetrate (considered least ideal) and 'B' containing more superfluous information than 'A' but laid out in an easily readable format (considered adequate). RESULTS: 401 patient events were analysed. 356 had an obvious diagnosis recorded (those that did not were associated with patient admission to ward). 76% had the diagnosis box filled in (55% using ICD). The letters were grouped as A 71%, B 27% and C 2%. CONCLUSION: Over 70% of letters are being produced in a format that the GP's wish. Filling out of diagnosis in the clearly labeled area could be improved with 24% not filling it in at all and only 55% utilising the ICD list. Diagnosis' (or working diagnosis') of patients being admitted is poorly recorded and communicated to GP's.

W198) Fibrinolysis performed vs fibrinolytic consumption in a prehospital emergency service : M.Victoria Hernández-Jaras¹, Francisco Peinado-Vallejo¹, Asunción Colomer-Rosas¹, Rafael Ortega-Gómez¹, Luis-Miguel Puertas-Calleja¹ : 1. SUMMA 112, Madrid, Spain.

INTRODUCTION: The 42 Mobile Emergency Units (MEUs) from Emergency Medical

Service of Madrid (SUMMA112) are capable of performing out-of-hospital fibrinolysis. Tenecteplase (TNK) is used as fibrinolytic drug, one TNK package (pk) is used for each fibrinolysis performed. Each MEU is provided one fibrinolytic pk, replaced by Pharmacy Service (PS) when used, expired or exposed to inadequate conservation conditions.

OBJECTIVE: To determine the number of TNK pk needed to be used for each fibrinolysis performed and factors influencing such usage. **METHODS:** 1. Analysis of all TNK pk dispensed by PS from January 2007 to May 2009. To establish causes for dispensation: fibrinolysis performed or replacement due to expiration or deterioration. 2. Review of causes for deterioration. 3. Review of expiration dates (ED) of pk supplied by the provider during the previous 18 months (m), January 2008-June 2009. **RESULTS:** 1. **CONSUMPTION OF FIBRINOLYTIC DRUG.** Total:193 PK. Out-of-hospital fibrinolysis performed: 149 (77.2%). Expired pk replaced: 30 (15.5%). Deteriorated pk replaced: 14 (7.2%). 1.3 TNK pk were necessary to be used for each fibrinolysis performed. 2. **DETERIORATION CAUSES.** Ambulance accident: 2 pk. Freezing due to refrigerator breakdown: 1 pk. Temperature higher than recommended: 11 pk. 3.- Pk ED: Total pk delivered to PS by the provider: 104. 18 pk, ED 13 m; 47 pk, ED 14 m; 25 pk, ED 15 m, and 14 pk, ED 16 m. **CONCLUSIONS:** The fact that more than one fibrinolytic pk is needed for each fibrinolysis performed may be explained by the short ED of pk supplied by the provider and deterioration due to exposure to temperatures higher than recommended. Therefore, supplied pk should have more prolonged ED to secure patient`s safety. Systems capable of maintaining temperature inside the ambulance within an acceptable range are required in order to avoid drug deterioration. We currently recommend that MEUs must be provided with the minimum stock of fibrinolytic therapy necessary to perform fibrinolysis if indicated, and pk turnover must be maximized.

W199) Validity of Modified Early Warning Scoring System in Identifying the Critically Ill patients. (A&E prospect) : Muhammad A. Majeed¹, Nandan Sadavarte¹, Katie Nolan¹, Ashes Mukherjee¹ : 1. ED, nhs, Dudley, United Kingdom.

INTRODUCTION: The Modified Early Warning System or ‘MEWS’ score is a system which relies on the measurement of basic patient physiological parameters including blood pressure, pulse, temperature and respiratory rate. These parameters are then combined to generate a score which is used to identify those patients who are most seriously ill and may therefore require intervention. It is now becoming commonplace in most inpatient wards in UK hospitals as it has been shown to be a useful and sensitive tool in identifying those patients who are at risk of significant deterioration and need for higher levels of care. Specifically it has been shown that there is a direct correlation between increase in ‘MEWS’ score and need for ICU/HDU care. Despite this, the use of such a scoring system in the A&E setting is limited and the traditional system of triage remains predominant. At the time of writing this paper there was little data to be found regarding the use of the ‘MEWS’ score in predicting outcome for patients in the A&E departments and indeed some data suggesting that its use adds little to the triage system already in place. **Objective:** To establish whether a system of ‘MEWS’ scoring of A&E patients is useful in predicting likely patient deterioration and need for ITU admission. **METHODS:** We performed a retrospective single centre cohort study of all patients admitted to ITU directly from the A&E department of a busy DGH between Sep-Dec 2008. **RESULTS:** All of the patients had a MEWS of >5 on arrival and in 30% of the cases it deteriorated further with time.

CONCLUSION: The results show that MEWS does pick up critically ill patients from ED. It is a sensitive tool. It might be useful to put it in the triage so as to identify patients at risk of deterioration. Thereby we can initiate early and focused investigations and treatment.

W200) A report of one year follow up of Spinal Cord Injury Treatment with Intrathecal Autologous Bone Marrow Stromal Cell Transplantation : Yuji Maeda¹, Toshio Nakatani¹, Masaaki Iwase¹, Fukuki Saito¹ : 1. Emergency and Critical care Medicine, kansai Medical University, Moriguchi, Osaka, Japan.

(Background)Spinal cord injury often results in devastating dysfunction and disability.
(Aims)Last year at the 5th European Congress on Emergency Medicine, we reported clinical application of spinal cord injury treatment by transplanting bone marrow stromal cells(BMSCs) into cerebrospinalfluid(CSF) (method)A 59-year old man fell down from about 5m height .He complained loss of sensation and tetraplegia.He was transferred to a previous hospital,and was diagnosed acute spinal injury.The magnetic resonance imaging(MRI) shows high intensity area of C4 level of medulla.For further exam and treatment,he was transferred to our hospital. On the day 3, the patients underwent posterior cervical decompression of C3 through C7 with bone graft and instrumentation. Simultaneously,cancellous bone of was collected, and was transported to a facility that meets the guide line for good manufacturing practice cell culture for clinical treatment ,to isolate and culture stromal cells that were multiplied reaching a cell count of 10^6 after 8 days .On day 11, under consent of patient and wife and ethics committee of our hospital, 2.1×10^6 BMSCs was transplanted into CSF through lumbar puncture technique.(Results)Sensation had changed not so much,but his motor function recovered well .Before transplantaion,ISCSI(International Standards for Neurological and Functional Classification of Spinal Cord Injury) motor score was 6 point,after transplantaion ,the score recovered to 42 point on day 19.(full point:100)The patient underwent MRI scan on the day 52.that revealed high intensity area in almost whole white mater on C4 level of cervical medulla.Finally,the patient transferred on the day 53 for further training of walking. He began to walk at 3 months,and was able to walk without any assist within 6months after injury,One year passed,His motor function seems to be better. (conclusion) We consider that his motor recovery is rapid. We have to accumulate in a number of cases and estimate the efficacy.

W201) Diagnostic Accuracy of Emergency Nurse Practitioners versus Physicians : T. M. Reijnen¹, M. C. van den Linden¹, R. de Vos² : 1. Medical Center Haaglanden location Westeinde, The Hague, Netherlands. 2. Academic Medical Center and University of Amsterdam, Amsterdam, Netherlands.

INTRODUCTION: In an attempt to reduce overcrowding, waiting times, and length of stay many hospitals have recruited emergency nurse practitioners (ENPs) to treat minor injuries and illnesses. We aimed to determine the incidence of missed injuries and inappropriately managed cases in patients with minor injuries and illnesses and to evaluate diagnostic accuracy of the emergency nurse practitioners (ENPs) compared to junior doctors/senior house officers (SHOs). **METHODS:** A descriptive cohort study was conducted in which patients met specific criteria for minor injuries and illnesses. 741 patients treated by ENPs were compared to a random sample of 741 patients treated by junior doctors/SHOs. Groups were compared on incidence and severity of missed injuries and inappropriately managed cases, waiting times and

length of stay. RESULTS: Within the total group, 29 of the 1,482 patients (1.9%) had a missed injury or were inappropriately managed (table 1). No statistical significant difference was found between the ENP and physician groups in terms of missed injuries or inappropriate management (junior doctor/SHO n=9 errors (1.2%), ENP n=20 errors (2.7%)). The most common reason for missed injuries was misinterpretation of x-rays (n=13/17 missed injuries). There was no significant difference in waiting time for treatment by junior doctor/SHOs vs. ENPs (20 minutes vs. 19 minutes). Average length of stay was significantly longer for junior doctor/SHOs (ENP=65 minutes, junior doctor/SHO=85 minutes, p=0.000; 95% CI=72.32-77.41). CONCLUSION: ENPs demonstrated high diagnostic accuracy with 97.3% of the patients correctly diagnosed and managed. No significant differences were detected between nurse practitioners and physicians related to missed injuries and inappropriate management.

Incorrect Treatment and Inappropriate Management

	All	Junior doctor/SHO	ENP
MISSED INJURIES	17 (1,1)	5 (0,7)	12 (1,6)
- avulsion fracture talus	1	-	1
- fracture distal tibia	1	-	1
- fracture distal radius	4	-	4
- fracture lateral malleolus	3	2	1
- fracture proximal fibula	1	1	-
- fracture proximal ulna	1	-	1
- fracture radial head	1	-	1
- fracture scafoïd	1	1	-
- fracture supracondylar humerus	2	1	1
- hyperplasia of the thymus	1	-	1
- small apical pneumothorax	1	-	1
INAPPROPRIATE MANAGEMENT	12 (0,8)	4 (0,5)	8 (1,1)
- forgotten injection	3	-	3
- inappropriate follow-up	1	-	1
- inappropriate physical examination	3	1	2
- incomplete intervention	2	-	2
- prescription wrong medication	1	1	-
- protocol not followed	1	1	-
- reposition fracture necessary	1	1	-

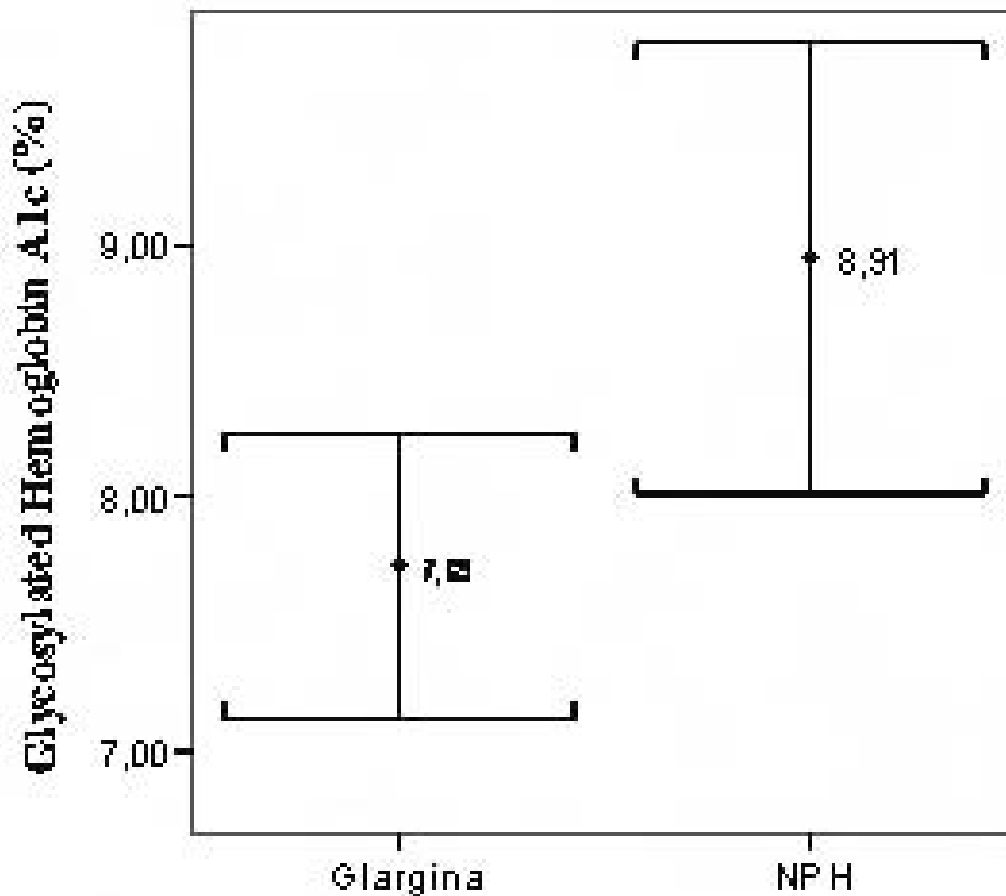
Data are numbers (%) unless indicated

W203) Determination of Glycosylated Hemoglobin A1c in diabetic patients admitted in an Emergency Department. : Amadeo Almela-Quilis¹, Juan Carlos Andreu-Ballester¹, Vicente Alcover-Medina¹, Rafael Lopez-Mauri¹, Enrique Marin-Tena¹, Ramon Gracia-Garcia² : 1. Emergency, Arnau de Vilanova Hospital, Valencia, Spain. 2. Arnau de Vilanova Hospital, Valencia, Spain.

INTRODUCTION: The glycosylated hemoglobin A1c (HbA1c) is a commonly used test in diabetes to determine if there has been good control of blood sugar in the previous three or four

months.

The objective of this study was to evaluate the types of diagnoses requiring hospital admission in patients with diabetes in our hospital and to determine the degree of control of the diabetes using the HbA1c. **METHODS:** The study included 100 cases, randomly selected, among the diabetic patients admitted to the short-stay area of the Emergency Department of the Arnau de Vilanova Hospital, Valencia (Spain). Variables included were: age and sex, principal diagnosis, HbA1c, and treatment, oral antidiabetic agents (OA) and/or insulin. The HbA1c was determined using a blood test by digital puncture with the DCA 2000+ Analyzer®. **RESULTS:** Of the 100 patients studied, 50 were male and 50 were female. The mean age was 77.4 ± 11.3 . 32 patients (32%) presented with infectious processes (51.1% urinary tract infection), 17 heart failure, 15 COPD decompensation, 14 hypoglycemia (9, 64% related to OA), 11 renal failure, and 11 other diseases. The average glycemia was 209.4 ± 124.5 and the mean HbA1c was 7.7 ± 2.1 . 58 patients were insulin-dependent, of these, 35(60.3%) used NPH and 23(39.7%) glargina insulin. The difference of means of the HbA1c was 6.7 ± 1.3 for patients treated with OA vs 8.4 ± 2.2 for patients treated with insulin ($p=0.001$). The HbA1c in patients treated with insulin was 8.9 ± 2.6 for diabetics treated with NPH vs 7.7 ± 1.3 for those treated with glargina insulin ($p=0.021$). **CONCLUSION:** The most common disease processes associated with diabetic patients in our Emergency Department were infectious diseases. Patients admitted to the short-stay unit (UMCE) have a mean HbA1c that is higher than the recommended level. Insulin-dependent patients have significantly higher levels of HbA1c than patients treated with OA. However, patients treated with glargina insulin have a significantly better control of their diabetes than those treated with NPH.



W204) Evaluation of activity and outcome of an emergency department short-stay unit : Àngels Novellí¹, Gemma Martínez¹, Javier Jacob¹, Ferran Llopis¹, Gilberto Alonso¹ : 1. Bellvitge Hospital, L'Hospitalet de Llobregat. Barcelona, Spain.

INTRODUCTION:

The Short-Stay Unit (SSU) is an alternative to conventional hospitalization wards that gives support to the Emergency Department (ED) and collaborates with community attending resources.

AIM OF THE STUDY:

To evaluate the activity and outcome of patients admitted to an EDSSU.

MATERIAL AND METHODS:

Descriptive and retrospective study. All patients admitted to the SSU from November 11th 2002 to August 31st 2008 (46 months in total). Data were collected for demographic variables, total number of admissions, diagnosis, mortality, length of stay and transfer to conventional hospitalization units, transitional care centers or home-based care.

RESULTS:

During the study period 10077 patients were admitted to the SSU, 5243 (52%) men, with a mean age of 75 years. Length of stay on average was 2.89 days and 647 patients died (6%). At discharge 671 patients (7%) were transferred to a transitional care center, 662 (7%) followed daily supervision at home and 493 (5%) needed further treatment or diagnostic procedures in a conventional hospitalization ward. Main diagnosis were acute exacerbation of chronic obstructive pulmonary disease and heart failure.

CONCLUSION:

The SSU appears to be an adequate resource, in terms of safety and efficacy, for selected medical patients attending the Emergency Department in coordination with other attending facilities.

W205) Predicted and not predicted mortality in an emergency department short stay unit: Review of recent experience. : Ferran Llopis¹, Carles Ferré¹, José María Ruíz¹, Javier Jacob¹, Xavier Palom¹, Gilberto Alonso¹ : 1. Bellvitge Hospital, Barcelona, Spain.

INTRODUCTION: The aim of the study is to evaluate the mortality of patients admitted to an Emergency Department Short Stay Unit (EDSSU) and compare predicted and not predicted mortality. **METHODS:** Design: Descriptive and retrospective study. Setting: A 24-bed unit from a 960-bed tertiary-care teaching hospital in the metropolitan area of Barcelona, Spain. Period: from January 1st 2005 to October 31st October 2008. Patients: All patients admitted to the EDSSU that died during the study period. Data were collected for demographic variables, previous hospitalization, length of stay and prognostic scores. Patients were analyzed in two separate groups: predicted mortality for patients in a terminal condition on admission and non-predicted mortality. **RESULTS:** During the study period 7368 patients were admitted to the EDSSU: 476 died (6.4%), 261 women and 215 men with a mean age of 82.7 and the majority (363) were admitted for palliation. When comparing the two groups, predicted and non predicted mortality, nursing home residents and cognitive impairment was more frequent in the former (32% vs 16% and 62% vs 35% respectively). Aspirative pneumonia was the main cause of death in the predicted mortality group (36.7%) and heart failure in the non predicted (39%), length of stay was moderately shorter in the first group (1.9 days on average vs 3.3) and no significant differences were found in terms of Comorbidity Index and Charlson Score. **CONCLUSIONS:** 1. Mortality in our EDSSU is mainly due to patients admitted in a terminal condition for palliative treatment. 2. Non predicted mortality is quite low. 3. Given the

increasing demand of attention in the ED for terminally ill elderly patients a short stay unit may be an adequate resource besides conventional hospitalization.

W206) Implementation of a process flowchart for QI projects: its impact on process awareness and collaboration between team members : Paolo di Martino¹, Maurizio Zanobetti², Marco Bartolini², Paola Ballerini², Paola Gioachin², Debora Mangione², Alessandra Materassi², Aleandro Pagliazzi², Francesca Resi², Aurelio Pellirone², Riccardo Pini² : 1. Tuscan Emergency Medicine Initiative, Firenze, Italy. 2. Azienda Ospedaliero Universitaria Careggi , Florence, Italy.

INTRODUCTION: In recent years Quality Improvement(QI) has become a key issue in the Emergency Department (ED). In January 2009, the ED Intensive Observation Unit (IOU) and the ED Radiology Services at the Careggi University Hospital started a QI project in order to improve the X-ray examination process from the request to the report. A multidisciplinary team was assembled and an external consultant (PdM) was called as facilitator and QI expert. Aim: To assess the impact of designing the actual process flowchart on the knowledge and communication between the team members (TMs). **METHODS:** The first step was to organize a series of structured meetings to design the actual process-flowchart. After completing the flowchart, a questionnaire (14 questions, each coded with 5 level Likert scale) was administered by the facilitator to the TMs. **RESULTS:** As reported in Table 1, all TMs completely agreed to reach a clear perception of the entire process and 7/8 agreed that designing the flowchart improved their knowledge of steps that were unknown or not completely understood before the project start. Moreover, all TMs agreed to understand better the needs of the other care providers and 7/8 agreed that this helped them to better value the work of others. 7/8 agreed that communications and collaboration were improved between TMs, and 6/8 agreed that they were able to develop a common language with their colleagues. 6/8 affirmed that the meetings helped to put the patient at the centre of the process. **CONCLUSIONS:** We found that the use of the flowchart as a QI tool provided clear perception of the entire process, clarifying steps that before were not completely understood or unknown to the TMs. The impact on the TMs was also high in terms of better understanding other's needs, higher value to other's work, and improved communications. Thus, the use of the flowchart was very effective in reducing the diffuse barriers that we normally find between different providers that interact along the care process, helping care providers to view the patient care as a continuity rather than a series of multiple steps.

Table 1: Histogram of team member responses to the 14 questions

QUESTION S	COMPLETE AGREEMENT	MODERATE AGREEMENT	UNCERTAIN	MODERATE DISAGREEMENT	COMPLETE DISAGREEMENT
After designing the flowchart, I have a clear perception	8	0	0	0	0

of the entire process					
During the flowchart design, I have comprised steps of the process that were unclear before	2	5	1	0	0
During the flowchart design, I have comprised steps of the process that before were unknown	1	6	1	0	0
I have comprised better the needs of my colleagues involved in the process	4	4	0	0	0
I feel that now my colleagues understand better my needs	2	6	0	0	0
I feel that designing the flowchart help me to give more value to the other's work	3	4	1	0	0
I feel that designing	3	3	2	0	0

the flowchart help the other care providers to give more value to my work					
I feel that designing the flowchart help me to better communicate with colleagues	5	2	1	0	0
I feel that designing the flowchart my colleagues try to better communicate with me	3	5	0	0	0
I feel that designing the flowchart help me to better collaborate with my colleagues	5	2	1	0	0
I feel that designing the flowchart my colleagues try to better collaborate	1	5	2	0	0

with me					
I feel that designing the flowchart help me to put the patient at the center of the process	0	6	2	0	0
I feel that now I share a common language with my colleagues	2	4	2	0	0
I fell myself much more motivated to improve the process with my colleagues	6	2	0	0	0

W207) Pulmonary Arteriovenous Malformation: A Case Report : Amir Daryani¹, Samad Shams vahdati², Shahryar Hashemzadeh¹ : 1. Tabriz university of medical science, Department of General Surgery, Tabriz, Iran. 2. Tabriz university of medical science, Department of emergency medicine, Tabriz, Iran.

BACKGROUND: Pulmonary arteriovenous malformation (PAVM) is an abnormal communication between the pulmonary artery and the pulmonary vein. PAVMs are usually congenital in origin. **CASE:** In this study we reported a 32-year-old woman that was referred to the clinic with the chief complaint of frequent coughs and hemoptysis for three months. Her past medical history revealed that she had a thoracotomy and decortication of the right lung due to clotted hemothorax, about 12 years ago while she had a term pregnancy. CT angiography and spiral CT-scan demonstrated cystic-masses in the right hemithorax. These masses enhanced like pulmonary vessels and had a feeding artery and evacuator vein. Three PAVMs were diagnosed in the right lung. The patient underwent right posterolateral thoracotomy. Two of the PAVMs were in the lower lobe which was treated by resection but the one in the middle lobe was completely intraparenchymal and it could not be localized during the surgery so lobectomy of the right middle lobe was performed.

W208) Assessment of Emergency Department Physical Chart Location, Identification and Differentiation Characteristics : Leo Kobayashi¹, Robert M. Boss², Frantz J. Gibbs³, Michelle M. Hennedy², James E. Monti³, Gregory D. Jay³ : 1. Rhode Island Hospital Medical Simulation Center (RIHMSC), Providence, RI, USA. 2. Emergency Department, Rhode Island Hospital, Providence, RI, USA. 3. Alpert Medical School at

Brown University, Providence, RI, USA.

INTRODUCTION: Medical record systems may represent an under-recognized hazard to patient safety. Investigators attempted to identify and characterize physical charting system-related errors and issues in an Emergency Department (ED) for planning of human factors engineering (HFE) interventions. **METHODS:** Investigators assessed specific limited elements of the charting system at study institution ED with respect to potential for contribution to medical error. The existing system, where single chart binders individually corresponded to patient care rooms and were stored in designated chartrack slots, was mapped with a proprietary study tool. Each of the active chart binders was located and classified as to whether it was in the correct chartrack slot or patient care area and if they could be readily differentiated from other patients' chart binders. IRB exemption was obtained. **RESULTS:** Ten audits at random sampling times were conducted over five consecutive days for 573 datapoints. The existing physical charting system was determined to feature inconsistent and small font labeling, single color scheme and an absence of HFE-based cues for error reduction. 56 (9.8%) chart binders (range 0.0-23% per audit) were found to be either category C or X, i.e., misplaced or improperly positioned relative to others in the treatment section; twelve (21%) were critical care area chart binders. There was positive correlation between the number of active ED patients and problems with chart positioning ($r=0.32$). **CONCLUSIONS:** A significant number of chart binders at the study site were found to be misplaced or unable to be readily differentiated from others in the same clinical area, especially in critical care areas of the ED during high census periods. Efforts to enhance medical record systems' ergonomics may be necessary to minimize their contribution to medical error.

1 = [Inside correct chartrack slot] or [Inside correct patient room] or [On correct CCR* side]
A = [Out of chartrack slot, on correct side of physician charting area]
B = [Out of chartrack slot, on incorrect side of physician charting area]
C = [Binder out of correct ED treatment section] or [Out of chartrack slot, on incorrect CCR side when 1 CCR patient or when other CCR chart in correct chartrack slot]
X = [Incorrect binder in chartrack slot] or [Out of chartrack slot, not on correct CCR side (incorrect CCR side or unable to differentiate due to both charts out of chartrack slots when 2 CCR patients)]
? = Chart not located
0 = No patient assigned to room
n/a = Room not in use at time
*Critical Care Room, 2 patient spaces per room

Emergency Unit Chart Location, Identification and Differentiation Study Chart Classification System



W209) Does Pain Affect Arterial Blood Saturation? : Hosein Alimohammadi¹, Ali Abdalvand¹, Ali R. Baratlou¹, Saeed Safari¹, Ali Shahrani¹, Hamid R. Hatamabadi¹, Ali Arhamiedolatabadie¹, Hamid Kariman¹, Mahsa Mackie² : 1. Emergency Medicine, Shahid Beheshti University of Medical Sciences,

Tehran, Tehran, Iran. 2. Isfahan Cardiovascular Research Centre, Isfahan, Isfahan, Iran.

INTRODUCTION: Pain management with the use of sedatives and analgesics has been accompanied by several advantages and a few complications and side-effects. In this study we planned to evaluate the effect of pain control on oxygen saturation independent of other factors like previous cardio-pulmonary conditions or respiratory rate. **METHODS:** 67 adult patients with direct trauma to extremities, who were referred to emergency room of Imam Hosain Teaching Hospital, were enrolled in this study. Exclusion criteria were: trauma to parts of the body other than extremities and having cardiovascular, pulmonary or other co-morbid disorders. Pain was evaluated using numerical rating scale and scored between 0-10. Patient's respiratory rate (RR) was recorded by a physician and blood oxygen saturation was measured using a pulse oximeter. Then fentanyl was administered with 2µg/kg dose under direct supervision of a physician. After 5 minutes pain score, oxygen saturation and RR was measured according to the above mentioned order. **RESULTS:** The pooled data of 67 patients with the mean age of 30 were collected (77% male). The mean pain score of these patients at the time of admission was 7.3 and significantly decrease to 3.8 after administration of fentanyl ($P<0.001$). The mean oxygen saturation and respiratory rate (RR) were 97.1% and 21.5 times/minute on arrival to emergency department. After pain control, mean oxygen saturation and respiratory rate (RR) were 94.9% and 19.2 times/minute that was only a significant decrease for RR in comparisons to the time of admission ($P<0.001$). Regression analysis of pain score and O₂ saturation differentiation shows no significant relation between them. This is worth mentioning that none of the side effects or complications of fentanyl was not observed in the patients. **CONCLUSION:** While the decrease in the RR is evidently due to successful pain control, the results of our study revealed no independent causative relation between pain control and oxygen saturation changes. To be able to reach a reliable conclusion further studies in a blinded fashion and with larger sample sizes are warranted.

W210) Importance of Spanish Language Skills in Emergency Department Physicians: Survey of Emergency Department Directors in Oregon and Southwestern Washington : Sarah M. Jump¹, Kiran Beyer¹, Dana Zive¹, Mohamud Daya¹ : 1. Emergency Medicine, Oregon Health Science University , Portland, OR, USA.

INTRODUCTION: In the United States, Hispanics are the largest growing demographic group and Spanish is the second most common language. Effective communication is an essential element to the physician-patient relationship. Prior studies have shown greater patient satisfaction when there is a language concordant physician or interpreter. **Objectives:** To examine the current status of Spanish language skills needed in the Emergency Department (ED) setting and the relative importance of these skills to patient satisfaction, efficiency, communication, and staff hiring practices. **METHODS:** A survey-based cohort study of ED directors in Oregon and Southwestern (SW) Washington. A 14-item questionnaire containing six Likert Scale opinion items was analyzed by Chi-Square and Fisher's exact test. **RESULTS:** The response rate was 60.7% (37/61). The reported annual census was grouped for analysis: <20,000 (55.6%); 20,001-40,000 (30.6%); and >40,001 (13.9%) visits annually. Nearly two-thirds (62.2%) of directors reported working in a rural area, with the remaining 37.8% reporting an urban/suburban practice area. Rural versus urban/suburban directors were more

likely to report using hospital staff to provide interpretation (78.3% vs. 42.9%; $p=0.039$, Fisher's). Likewise, rural directors reported greater use of family members as interpreters (69.6% vs. 35.7%; $p=0.086$, Fischer's). A majority (75.5%) of directors agreed/strongly agreed that Spanish speaking patients' satisfaction is improved with a Spanish speaking physician. Moreover, 94.6% of directors agreed/strongly agreed that ED patient flow is more efficient when physicians are able to communicate without an interpreter. Directors agreed/strongly agreed (54.3%) that when hiring a new ED physician they would give preference to a Spanish speaking physician. CONCLUSIONS: ED directors in Oregon and SW Washington report that physicians who speak Spanish can improve patient flow, communication and patient satisfaction.

W211) Analysis of patients applying to emergency service more frequent than regular : Mehmet Dokur¹, Aysegul Ates¹, Mustafa Sever² : 1. Kilis State Hospital, Kilis, Turkey. 2. Ege University, Izmir, Turkey.

INTRODUCTION: Patients applying to emergency service more frequent than regular may be a problem for emergency departments. These problems may be particularly handled if those patients are identified and directed to related branches properly. **METHODS:** We analysed 50 identified patients who presented to our emergency department frequently in last 2 years. Thereof 60% were chronic obstructive lung patients, 25% were somatoform disorder patients, 10% were coronary artery disease and heart failure and 5% were comprised by other patients. **RESULTS:** Chronic obstructive lung patients are more resistant and live longer where they apply emergency service more than other patients (55 applications per annum), somatoform disorder patients applied 30 times per annum, coroner artery disease and heart failure patients applied 25 times and other patients applied 13 times in average per annum. **CONCLUSION:** Patients applying to emergency service more frequent than regular should be closely followed up in outpatient clinics to avoid the workload increase in emergency services.

W212) How to show the benefits of developing emergency medicine : Dan B. Petersen¹ : 1. Kolding Hospital, Kolding, Denmark.

INTRODUCTION: Kolding Hospital was one of the first hospitals in Denmark to set up an Acute Admission Department (called AMA) where acute patients from all specialities can stay for a maximum 48 hours. Traditionally the junior physician was the first to see the patient, either referred from the general practitioners or self referred to the emergency room. If a patient had to be transferred to another specialty he would have to see another junior physician who would have to make a new record. Since the 1st of March 2009 the junior physicians work entirely in AMA and the emergency room, seeing and admitting all categories of patients. During their time in AMA the patients can be transferred to another specialty, but stay in the same bed and have the same contact nurses. They will be seen by other specialists but on the basis of the original record made by the junior physician in AMA. **METHODS:** As a pilot project an audit was made on all the records from patients in AMA in a 7-day period in May 2009. **RESULTS:** 142 records were reviewed. 124 (87,3%) patients were seen by only one junior doctor and treated traditionally within one specialty. A total of 18

patients (12,7%) had a course that would not have been possible earlier. 2 patients (1,4%) were admitted to another specialty than referred to in the first place. Traditionally they would have been seen by two or more junior physicians. 6 patients (4,2%) were admitted to one specialty but transferred to another specialty later but the patient did not have to see a new junior physician. 6 patients (4,2%) were observed and treated for both a medical and a surgical condition, but only seen by one junior physician. 4 patients (2,8%) were referred from a neighbouring hospital (Fredericia) and the information in the original charts was used. CONCLUSION: The majority of patients can be handled within the traditional system. However several patients saw a fewer number of junior physicians and a transfer to another specialty was easier than before. A record audit is time consuming, but can identify benefits of new ways of organizing the work. We are encouraged to review a greater numbers of records.

W213) The accuracy and usefulness of emergency department crowding study tools in a Dutch emergency department : Maro Sandel¹, Patricia Putten¹ : 1. Emergency department, Haga Hospital, The Hague, Netherlands.

INTRODUCTION: Emergency department crowding is defined as a mismatch of supply demand and affects patient-care and providers. In the Netherlands there is no data available on emergency department crowding. We studied the accuracy and usefulness of two operational crowding measuring tools by direct comparison with subjective assessment by ED staff in a Dutch teaching hospital. METHODS: A sample of simultaneous subjective and objective data pairs were collected four times a day for a period of 10 days. Both nurses and physicians in the ED answered a brief questionnaire. Simultaneously the total number of patients in the ED, the number of patients in the waiting room, the patient triage category, the number of patients awaiting admission, the number of nurses on duty and the number of attending physicians on the work floor. The objective indicators were used to calculate the Emergency Department Work Index (EDWIN) and the Workscore score. With each measurement, five physicians and five nurses were asked to rank the crowding using a five-point Likert scale. The objective scores were compared with the corresponding averaged subjective scores. RESULTS: Data collection is completed. Analyses is ongoing at this moment. Preliminary results show a total of 46 measuring moments. No problems were encountered in data collection. CONCLUSIONS: This study presents the first data on emergency department crowding in the Netherlands. Using operational crowding measuring tools might increase our understanding of the processes and help solving emergency department crowding.

W214) A “double-coding triage system” to re-organize the patient pathways in the Emergency Department (ED): the experience of an Italian Hospital : Elena Mana¹, Marina Civita¹, Cristina Sfasciamuro¹, Chiara Odetto¹, Alberto Goffi¹, Gian A. Cibinel¹ : 1. SC Medicina e Chirurgia d'Accettazione e Urgenza, Ospedale "E. Agnelli", Pinerolo - ASLTO3, Pinerolo, Turin, Italy.

INTRODUCTION: As stated by law, priority to enter the ED in Italy is triaged according to a colour code (red, yellow, green, and white) that allows the stratification of patients based on main complaint. METHODS: After review of procedural protocols in the ED, a new triage system, combining a numerical code with the more traditional colour code, was developed. The

numerical code identifies four different categories according to the potential rapidity of clinical deterioration. The new system, based on 6 codes, identifies: 4RED: high evolution risk (ER)/Severe suffering – Immediate medical evaluation (ME); 3YELLOW: Intermediate ER/High suffering; 2YELLOW: Low ER/High suffering; 2GREEN: Low ER/Low suffering; 1GREEN: Null ER/Low suffering; 1WHITE: Null ER/No suffering. During the first trimester of 2008, access of patients in the ED has been analyzed applying this new system. Particular attention focused on the waiting time (WT) of patients before a ME. The ED was organized in three different working lines, differentiating patients having surgical issues (one dedicated MD), medical issues (two MD) and patients with low codes (one MD). The data analysis led to a re-organization with a four-pathway system: two for newly admitted patients with high priority code (Yellow and 2Green), one for patients admitted on the previous clinical shift and for patients needing immediate assessment (4Red) and finally one for patients with low codes (1Green and White), the last one running only during day hours. The WT of patients managed with the new system was compared to the WT of the previous setting. RESULTS: Overall, the new triage system resulted in a significant reduction of the WT for patients with high priority codes (4RED: WT before 0.00' Vs after 0.00'; 3YELLOW: 0.48' Vs0.14'; 2YELLOW: 0.49' Vs0.15'; 2GREEN: 1.00' Vs0.38') and a moderate increase of the WT for patients with low priority codes (1GREEN: 0.50' Vs0.55'; 1WHITE: 1.16' Vs1.35'). CONCLUSIONS: This study demonstrates that the implementation of new procedural organization may result in a more efficient health service.

W215) Emergency department patient satisfaction survey in Imam Reza Hospital, Tabriz, Iran : Hassan Soleimanpour¹, Changiz Gholipour¹, Shaker Salarilak², Payam Raoufi¹, Reza gholi Vahidi¹, Amirhosein Jafariroohi¹, Rozbeh Rajaei ghafori¹, Maryam Soleimanpour¹, Roghaeh Dargahzadeh¹, Shiva Yousefi¹, Farnaz Helali¹, Roghaeh Rouhi¹ : 1. Emergency Department, Tabriz University of Medical Science of Iran, Tabriz, Iran. 2. Orumia University of Medical Sciences of Iran, Orumia, Iran.

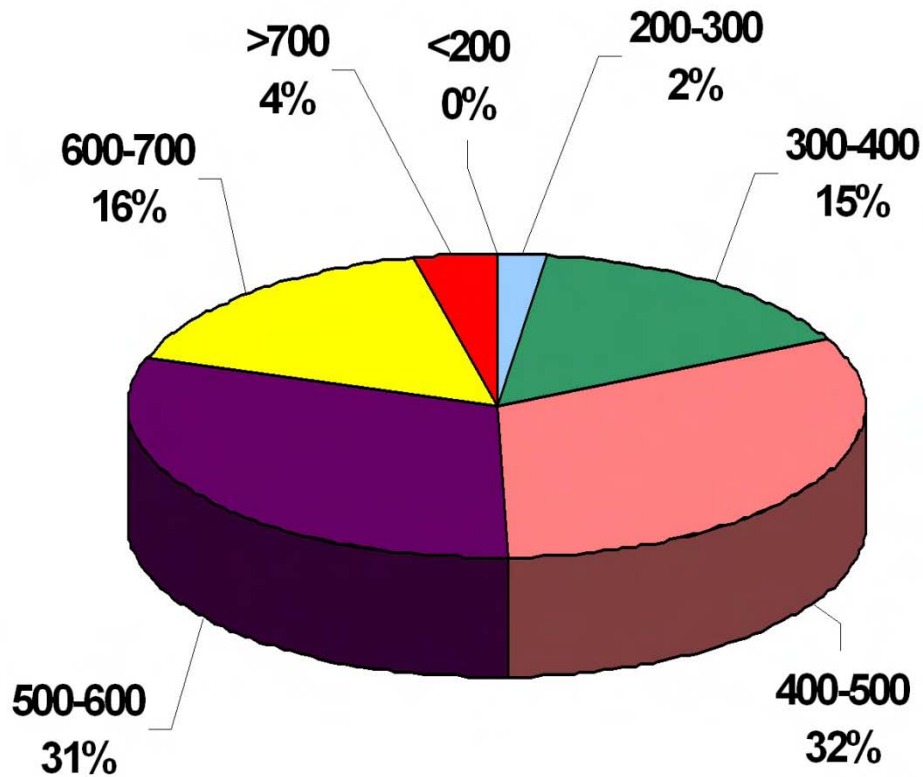
INTRODUCTION: Patient satisfaction is an important indicator of the quality of care and service delivery. The objective of this study was to evaluate patients' satisfaction with the emergency department of Imam Reza hospital in Tabriz, Iran. **METHODS:** This study was carried out in one week and during all shifts. Trained researchers used a standard Press Ganey questionnaire. The study questionnaire included 30 questions, based on Likert-scale items. Descriptive statistics were used throughout data analysis in a number of ways using SPSS 13. **RESULTS:** Five hundred patients presented to our ED were included in this study. The highest satisfaction rates were observed in the terms of Courtesy of physicians (82.1%) and Courtesy of nurses (78.1%). The patients rated high dissatisfaction with these items: Care provider's efforts to involve patient in decisions about treatment (26.5%), Waiting time before the first visit by the care provider (26.2%) and Cleanliness of emergency room (22.2%). The mean waiting time for the first visit of physician was 24?,15?. Overall, satisfaction rate was dependent to the mean of waiting time. The mean waiting time for the low rate of satisfaction was 47?,11? with the confidence interval (CI) of (19.31, 74.51), and for very good level of satisfaction it was 14?,57? through (CI:10.58, 18.57). 63.2% of the patients rated their general satisfaction with the emergency setting as good or very good. The rate of satisfaction for the mediocre level was 23.3 (CI:19.1, 27.5), for the high level of satisfaction it was 28.3 (CI:22.9, 32.8) and for very high level of satisfaction this rate was 32.9% (CI:28.4, 37.4).

CONCLUSION: The study findings indicate the need for evidence based interventions in the emergency care services. Efforts should focus on shortening waiting intervals and improving patients' perceptions about waiting in the ED and also improving the overall cleanliness of the emergency room.

W216) Can NEDOCS score be useful for estimating the ED overcrowding in an Italian hospital? : Alessandra Revello¹, P. Daniele¹, M. Lucani¹, F. R. Pugliese¹ : 1. ED, Sandro Pertini Hospital, Rome, Italy.

INTRODUCTION: The ED at Sandro Pertini Hospital in Rome (300 bed for 700.000 inhabitants) has a census of 85.000 pts/yr with less than 20% requiring hospital admissions. This obviously exceeding health demand causes ED overcrowding and has obliged our hospital to organize a progressive surge plan, actually based only on the number of patients waiting for hospital admission. Aim: We used a validated method, NEDOCS, to measure overcrowding, improve ED response and standardize a surge plan. **METHODS:** NEDOCS scores (168/170 samples) were calculated for a period of 33 days (6 March – 8 April 2008); 5 samples a day (1 a.m., 7 a.m., 1 p.m., 6 p.m., 11 p.m.) by ED nurses and physicians. NEDOCS results were compared with discharged pts, LWBS, refusing admission to hospital pts (RAHP) and pts admitted or transferred to other hospitals. Samples and data were obtained from computer records. **RESULTS:** NEDOCS score mean was 504,7 (min 270- max 985), 63% with a score of 400-600. The highest scores were always found at 01:00 p.m. and on Friday and Monday. The highest number of LWBS (average 8 pts) occurred between 02:00-06:00 p.m., while the highest RAHP (average 13 pts) occurred between 10 a.m. -3 p.m., both most commonly occurred on Mondays. The highest rate of hospital admissions was between 11:00 a.m. -4 p.m. Our ED defines “overcrowding” and advises EMS ambulance diversion when there are 30 pts waiting for hospital admission, 70-85 pts in the ED (NEDOCS 500-600); “serious overcrowding” 30 pts waiting for hospital admission, more than 85 pts in ED (NEDOCS 600-700) and starts the surge plan first step, a double-up bed in other departments. “Dangerous overcrowding” is defined as 40 pts waiting for hospital admission, more than 95 pts in ED (NEDOCS >700), and starts the surge plan second step of no planned admission and double-up beds in all departments. **CONCLUSIONS:** The original NEDOCS scale is not used in our hospital. Its systematic use, compared with other flow parameters (discharges, LWBS, RAHP, admissions) can be useful to understand what changes can lessen the overload in ED and when it is necessary to activate the surge plan.

NEDOCS scores results



W217) Coordinating nurse reduces ED transit times : Diederik Van Sassenbroeck¹, Adrien Roberti¹, Patrick De Weerd¹, Donald A. Claeys¹ : 1. Emergency Medicine, Maria Middelaeres Hospital, Ghent, Belgium.

INTRODUCTION: The emergency department (ED) of our hospital serves the emergency care of patients brought in by EMS or by self-referral, as an admittance service for patients known to specialists in the hospital and as an in-hospital resuscitation team. METHODS: A quality screening in the end of 2007 showed that sometimes an overview of the patients admitted was

missing and that there were possibilities for the reduction of transit times of patients. Therefore, nurses were trained to fulfill a coordinating function. This encompasses the intake of the patient, with an appreciation of the degree of emergency, the communication with all medical and paramedical services in and out the hospital and the allocation of medical and nursing tasks to the medical staff and the nurses. The impact of the coordinating nurse was evaluated by comparing treatment times during patient stay in the ED in December 2007 versus December 2008. RESULTS: For 299 and 306 patients respectively intervention times of different medical and nursing tasks were recorded and related to the time of registration at reception (time zero). These interval times were expressed as mean(s) \pm SD and compared with ANOVA. Overall, there was a trend to a reduction of patient ED stay time (222 ± 207 vs 194.6 ± 171.4 min). Significant reductions were noted for the time at first contact with the nurse (15.4 vs 6.7 min), time to first call of the physician on duty (17 vs 11.7 min) and the time to first contact with the physician on duty (50.5 vs 29.1 min). There was a trend to reduction of the waiting time to blood sampling and demand of technical investigations, start of definitive treatment, and to transfer to a hospitalisation ward. The registration also revealed the fast execution of actions that solely depend on the ED (e.g. the administration of symptom controlling medication), while waiting times in the ED were mostly related to delays of other services in the hospital (e.g. performance times of technical services). CONCLUSION: We conclude that a coordinating nurse can guarantee an overview of all patients on the ED, reviews transit times and help to reduce waiting time for treatment and transit times.

W218) Effect of an Attending Physician Float Shift to Care for Boarding Patients in an Overcrowded Emergency Department : Shannon Holt¹, Lisa Hardy¹, Chintan Mistry¹, Erik Kulstad¹ : 1. Advocate Christ Medical Center, Chicago, IL, USA.

INTRODUCTION: Despite the increasing problem of emergency department (ED) overcrowding, few solutions that can be readily implemented in the ED have been examined. Patients backlogged in the ED waiting for an inpatient bed (boarders) continue to require the attention of ED physicians, further exacerbating crowded conditions. To address this problem, our department added a "float shift" to our winter schedule solely to provide care to boarders. We sought to quantify the effect of this float shift, hypothesizing greater physician productivity when this shift was utilized. METHODS: We performed a retrospective observational study in our community hospital ED, measuring the number of new patients seen in each 10-hour shift in the presence or absence of a float shift physician. By querying our ED electronic tracking board, we extracted the number of new patients seen for each of 9 daily shifts during the months of February (when the float shift was present) and May (when the float shift was absent) of 2008. We then compared the mean number of patients seen per shift in February with the mean number seen per shift in May.

RESULTS: Total monthly patient volume was 6656 for February and 6775 for May, with the mean daily census being 230 and 219 patients, respectively. Mean door-to-disposition time (256 minutes versus 222 minutes) and total time on diversion (83 hours versus 43 hours) was greater in February than in May. However, the number of new patients seen during each shift in February was greater than in May (mean increase of 1.1 patients per shift), with 2 daily shifts having significantly greater mean new patient volume (19 versus 17 patients, $P=.049$, and 22 versus 19 patients, $P=.012$). CONCLUSIONS: The presence of a "float shift" physician

caring only for boarding patients allows other physicians to maintain and even increase their productivity in our ED, despite the presence of longer throughput times and increased time on diversion.

W219) Adaptive Process Triage – quality effects of a new triage system : Martin Nordberg¹, Sven Lethvall¹, Maaret Castren¹ : 1. Karolinska Institutet/Department of clinical science and education, Södersjukhuset, Stockholm, Sweden.

INTRODUCTION: Many different triage systems are in use around the world. A new triage system was developed in Sweden in 2006; Adaptive Process Triage (ADAPT). ADAPT is based on a trace and trigger tool for vital signs according to the ABCD-principle and a short systematic questionnaire for each chief complaint. The main objective is detection of the seriously ill, guidance of healthcare personnel for patient streaming and to be a communication tool. The triage system is based on lean-principles and modern ideas for patient streaming. ADAPT was introduced at Södersjukhuset (SGH) in Stockholm, Sweden 1. January 2008 and at the same time the Manchester Triage System (MTS) was abandoned. **Objectives:** To compare the difference in quality effect of two triage systems using internationally suggested quality indicators (QIs) for EDs. **METHODS:** Two samples were used; all patients visiting the ED in SGH between July-December 2007 and the same period 2008. Automatically collected data from the patient administrative system for 90812 patient visits were analyzed. Five different QIs were computed during the study: median Length of Stay (LOS), median Time to Doctor (TTD); proportions of: Unscheduled Return visits in 72 hours (UR72), shorter than 4 hours LOS (L4H), Left Before Treatment was Completed (LBTC). Kolmogorov-Smirnovs test was used to control normality and the Independent T-test was used to study the significance of the differences between the two sets. **RESULTS:** Although a worsened workload, most QIs showed positive changes between 2007 and 2008. The only QI not showing positive changes when ADAPT was introduced was Time To Doctor. The changes in LOS ($p=.00$) see Fig.1, TTD ($p=.00$), shorter than 4 hour LOS ($p=.001$) and Left Before Treatment Completed ($p=.002$) were all statistically significant, Unscheduled Return visits within 72 hours ($p=.750$) was not. All results are shown in Table 1. **CONCLUSIONS:** Using ADAPT as a triage system instead of MTS seems to have positive effects on ED QIs for SGH. This study is the first to assess the effect of ADAPT on an ED and more thorough studies are planned.

Table 1

	Year	N	Mean	Std. Deviation
No of visits, per month	2007	6	7361	99,2
	2008	6	7775	230
LOS (minutes)	2007	6	239	3,29
	2008	6	227	4,97
TTD (minutes)	2007	6	72,8	4,26
	2008	6	89,7	3,45
L4H (%)	2007	6	49,2	1,78

	2008	6	53,5	1,26
LBTC (%)	2007	6	4,64	,277
	2008	6	4,02	,242
UR72 (%)	2007	6	3,42	,298
	2008	6	3,37	,211

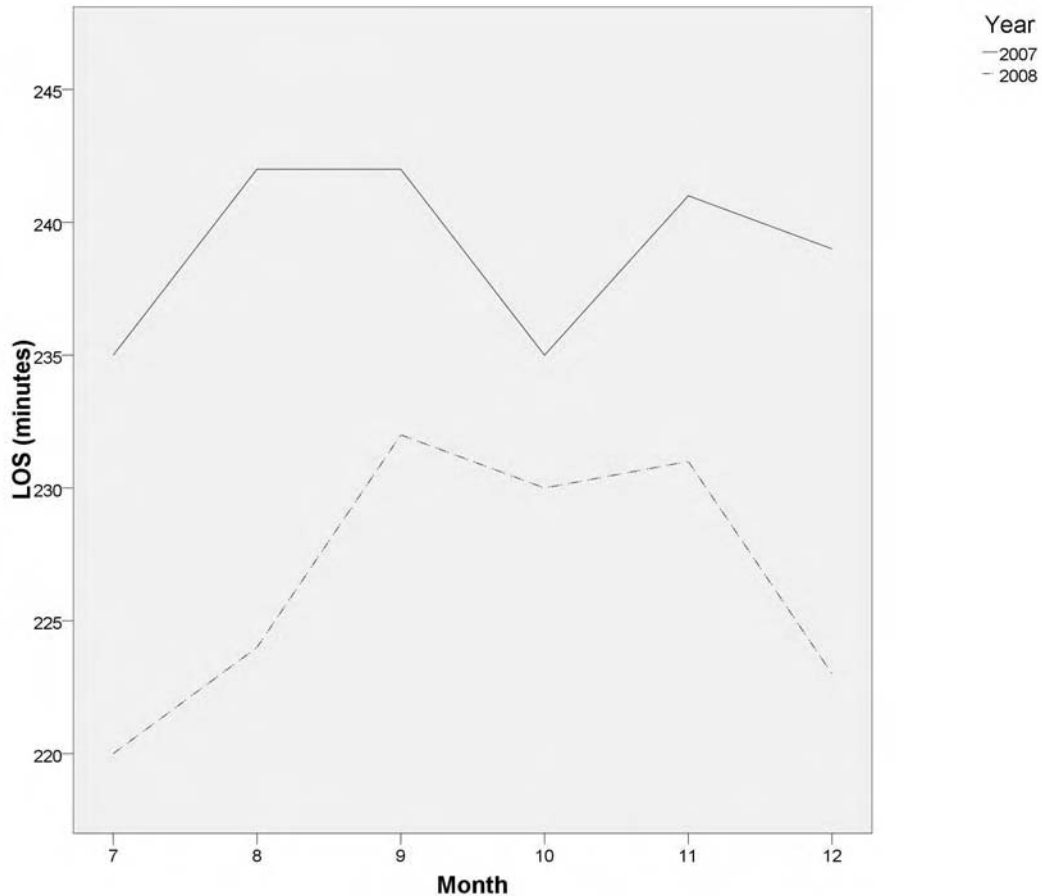


Table 1.
Length of stay over time 2007 and 2008.

W220) EARLY EVALUATION TEAM AT INTERMEDIATE SEVERITY AREAS (EETI) OF A&E DEPARTMENTS (AED) : Malagón Francisco¹, Agud María¹, Romero Yolanda¹ : 1. Hospital Universitario Puerta de Hierro Majadahonda, majadahonda, madrid, Spain.

INTRODUCTION: In recent years there has been a marked increase in the workload and

waiting times in AED, particularly in the intermediate severity areas. We have developed a system of early evaluation of patients at intermediate severity area (EETI) to try to reduce waiting times and correct the mistakes of the initial nurse's triage. In the EETI model, comprising a doctor and a nurse, the team responds as early as possible after the arrival, of all the patients referred to this area and, after a very short clinical history and physical examination, ask for the exams and start the necessary treatments. Continuity of care of these patients is carried out by the rest of the doctors and nurses in this area of care. The implantation was performed in 2 phases which were both compared with the previous period: pilot phase 1 and phase 2, after the diffusion of an operation protocol. METHODS: Retrospective analysis of computerized database (Data Ware House [DWH]) and the electronic medical record (Selene 5.0) of 150 (will be expanded 10 times in the next revision) adult medical patients discharged after their attendance at an intermediate severity area of an AED: 50 during the previous period, 50 during phase 1, and 50 during phase 2. We have collected the following variables: time of admission, time of initial nurse's triage, time of first care, discharge in the system (DWH) and discharge's real time (time of last clinical note). The analysis was performed with the statistical program SPSS. RESULTS: The first time attention was lower ($p=0.02$) during the preliminary phase (97 ± 64 min), than during Phase 1 (37 ± 23 min.) and phase 2 (32 ± 25 min). If one considers the discharge's real time, the average stay in emergency care was significantly higher ($p=0.02$) during the previous phase (383.5 ± 285.8 min.) than during phase 1 (282.0 ± 154.6 min.) and phase 2 (260 ± 162.1 min.). Significantly more patients (5.5% in previous phase vs. 1% in phase 1 and 2) left the AED without attention. CONCLUSIONS: The system of early evaluation (EETI) has been shown to reduce the waiting times in the emergency room. This results in better care and greater user satisfaction.

W221) Reliability and validity of a triage protocol (Triage Sintomatologico Standardizzato) : Mario Calci¹, Tiziana Tellini¹, Luciano Strizzolo¹, Marco Del Pin¹ : 1. PS - Med Urg Ospedale di Palmanova, Trieste, Italy.

INTRODUCTION: Triage is the clinical process that sorts patients presenting at the ED on the basis of their acuity. Several triage systems exist worldwide, based on different numbers of priority levels (foreseeing two- to five-level scales of different trauma scores). Italian official triage guidelines require a 4-level, in-hospital triage, but don't define the triaging model. In the Friuli Venezia Giulia region, a regional triage protocol has been developed since 1999: the "Triage Sintomatologico Standardizzato" [TSS].

This retrospective, observational study aims at 1) measuring inter-rater reliability (reproducibility) of the instrument, and 2) validating the triage instrument against patient all-cause, 30-day mortality. METHODS: 1) Inter-rater reliability was evaluated based on 252 triage scenarios. Six ED triage nurses performed retrospective blinded triages confronted with a Gold Standard. 2) Validity was tested with a retrospective, observational study of adult patients triaged at the Palmanova Hospital.

RESULTS: Reliability: Reliability was satisfactory among nurses ($K = 0,70$ - CI: 0,56-0,838) and excellent between the group and the gold standard ($K = 0,91$ - CI: 0,78-1). Sensibility and specificity ranged respectively 97% and 75%; positive predictive value 93%; negative predictive value 88%. Validity: A total of 20706 patients triaged from midnight of 01.01.2007 to midnight of 31.12.2007 were studied. The patients deceased within 30 days from admission

in ED were 577 with a mortality rate of 2,8 % (27,85% for higher acuity group). The relationship between acuity code and mortality was highly significant (CC 0,4863512).
DISCUSSION: Reliability: Inter-rater reliability is similar to a precedent Italian study by Parenti but lower than other 5-level triage scales. The TSS shows good inter-rater reliability with the referred standard. Validity: There is a strong association between all causes mortality within 30 days and the triage codes.
Future research should test the reliability using a randomized sample of nurses from different EDs in the region.

W222) Modification of the Use of a Hospital Admissions Unit to Target Reduction in Emergency Department Admissions Holds in an Urban Academic Medical Center : Harinder Dhindsa¹, Renee Reid¹ : 1. Virginia Commonwealth University, Richmond, VA, USA.

INTRODUCTION: Hospitals across the country are experiencing emergency department (ED) overcrowding, and are struggling to find solutions to alleviate this problem and improve patient throughput and decrease diversion hours. Objective: The purpose of this study was to determine whether removal of patients such as those requiring liver biopsy and PICC lines as well as addition of telemetry and expansion of operating hours would significantly impact the ability to offload patients in the ED holding for admission. **METHODS:** A retrospective review of admissions data to the ten bed hospital admissions unit for the periods of July 2007 through September 2007 and July 2008 through September 2008 was conducted to determine number of admissions, hours utilized and length of stay for various categories of patient sources including the ED. Changes were implemented in how unit use was prioritized for ED patients starting in January 2008. Patients needing liver biopsy and PICC lines were no longer allowed to utilize this unit. Telemetry capability was added and unit hours were expanded. **RESULTS:** For the period in 2007, there were a total of 90 out of 362 (25%) patients that utilized the admissions unit. In terms of total patient hours, ED patients utilized a total of 524 out of 2214 hours or 24% of all the hours. For the 2008 period, after the changes were made, ED admissions accounted for 379 out of 556 admissions to the unit or 68%. Measured in hours, ED patients accounted for 3,949 out of 6004 hours or 66%. **CONCLUSION:** These results demonstrate how the admissions unit in our urban academic medical center, when utilized appropriately and with hospital administration commitment, was able to significantly offload ED volume of admitted patients. Limitations of this data include a small sample size during a limited time of the year that does not account for any seasonal variation that might occur.

W223) Impact of telephone conversations of a purely organisational character on the functioning of an Accident and Emergency (A&E) department. : Levent Sahin¹, Peter Dillen¹, Chris Boone¹, Philippe Vets¹, Jan Stroobants¹ : 1. ZNA Middelheim, Antwerp, Belgium.

INTRODUCTION: The study objectives were to: 1) calculate the impact of telephone conversations of a purely organisational character on the workload of an A&E department; 2) examine if the implementation of an administrative employee in the A&E team is necessary and if so, in which circumstances would it be most efficient. **METHODS:** During a period of 100 consecutive days, all ingoing and outgoing telephone conversations of purely

organisational character in an A&E department were registered. Conversations of a medical character were not included in the study. Beginning and end times of each telephone conversation were electronically stored. The busiest 8 hour period in a day was calculated by the addition of the conversation times and the number of conversations in each 1 hour block. Within this 8 hour period the time was also calculated in which no conversations took place. RESULTS: During the research period 9566 patients were registered in A&E. 15,298 telephone conversations of a purely organisational character took place. The total duration of these conversations was 262 hours and 19 minutes. This equals a workload of 0.48 FTE. P50 of the conversation time were 1 minute and 55 seconds, P75 3 minutes and 34 second and P90 5 minutes and 47 second. Most of telephone conversations took place between 09.00 and 17.00. 65.13% of the total number of conversations took place during this period. The conversations lasted however longest in the period 11.00 and 19.00. 64.39% took place between these times. Of which 65,5% were during the week days and 61,3% during the weekends. CONCLUSION: The time spent on organisational telephone conversations during an A&E department visit is considerable. Implementation of an extra administrative employee is most efficient between 09.00 and 17.00 on weekdays. During such a busy period during the day there is in addition the possibility to assign other administrative duties to such an employee, which otherwise would be performed by paramedical employees (e.g. registration)

W224) Multisystem Approach to Facilitate Patient Flow and Treatment in the New York Presbyterian Weill Cornell Emergency Department : Kyoko Yamauchi¹, Neal Flomenbaum¹ : 1. Emergency Department, New York Presbyterian University Hospital of Cornell and Columbia, New York, NY, USA.

Patients' health outcomes are known to be adversely related to an increase in waiting time. In order to facilitate patient flow and treatment, New York Presbyterian Weill Cornell Emergency Department has implemented a multisystem approach to effectively manage overcrowding and to improve productivity. The Emergency Department has developed a new system involving multiple disciplines and the relocation of ED resources, and has expanded its capacity for the timely examination and disposition of its patients. The new systems implemented to decrease patients' waiting time and increase patient flow are: improved information technology, a rapid registration system, rapid laboratory turn around, 24 hour attending radiologist coverage, dedicated ED transport system, new space allocation, creation of a new administrative attending position to facilitate patient disposition, ambulance triage to reduce ambulance turn around time, and assignment of Emergency Department clinicians to the waiting room. Combined multisystem efforts have helped expedite patient flow and treatment, despite an ever-increasing census in the Emergency Department. The structure of the New York Presbyterian Weill Cornell Emergency Department is discussed and the role of each new system involved to solve overcrowding is described. Available data and results are summarized.

W225) The Effect of Triage on Emergency Centre Turn-around Times in a Private Hospital : Errol P. Visser¹ : 1. Emergency Centre, Vergelegen Medi-Clinic, Somerset West, South Africa.

INTRODUCTION: The Trauma Early Warning Score (TEWS) has been developed to assist

triaging mainly at State institutions in South Africa. METHODS: The system has been implemented in an Emergency Centre in the private sector, which manages 1 200 monthly. The parameters reviewed were: 1. The effect of throughput times before and after triage implementation. 2. The effect of triage on clinical benchmarks.

W226) Characteristics of Self-Referred Attenders at the Accident and Emergency Department of a Regional Hospital in the Netherlands: A Pilot Study : Griet M. Spiessens¹, Maaïke Blok¹, Maarten Van der Elst¹ : 1. Emergency, Reinier de Graaf Groep Delft, Rotterdam, Netherlands.

INTRODUCTION: Over the course of the 20th century, the number of new attenders to emergency departments has continued to rise. Included in these attendances are significant numbers of patients who we refer to as “inappropriate”, since they seek medical help for non-urgent problems. With the development of emergency medicine as a new specialty in The Netherlands, good triage and patient education by emergency physicians could make a difference in this matter. METHODS: The first part of the study consists of a retrospective descriptive analysis of the characteristics of every patient who visited our emergency department from the 1st of June 2008 up till the 1st of July 2008. In the second part we present the results of a self-designed questionnaire on the motives of the self-referrals which was handed out randomly during the same month. RESULTS: The average self-referred patient is male, between 10 and 30 years old, with a complaint that started less than one hour before presentation, attended to by a physician of the surgical or orthopaedic specialty. Further imaging was done in more than half of the self-referred patients, and laboratory studies and ECG’s in respectively 25% and 15%. Significantly less admissions and follow up appointments were arranged in the self-referral group. CONCLUSION: There seems to be a lack of information in the general population concerning the purpose of the A & E facilities, the skills and knowledge of the general practitioner and the availability of the GP. A larger study group number and randomization for the type of complaints are needed to get more clarity.

W227) Does Utilization of Physician Extenders Reduce ED LOS, While Maintaining Patient Satisfaction Scores? : Michael E. Silverman¹, Fred Fiessler¹ : 1. EM, Morristown Memorial Hospital, Morristown, NJ, USA.

INTRODUCTION: With our “changing” medical environment, the addition of physician extenders is becoming common practice. It is conceptualized that they help reduce expenses and improve patient (pt) through time while reducing costs. Objective: To determine whether utilization of physician assistants (PA) reduces ED LOS without a negative effect on pt satisfaction. METHODS: Design: Retrospective, cohort study. Setting: University affiliated hospital located in suburban New Jersey, with an ED Residency and annual ED census of 65,000 visits. Subjects: Pts presenting to our combined fast tract /pediatric ED opened 16 hours a day. Equivalent days were chosen to approximate similar ED pt volumes. Protocol: A retrospective analysis of data collected from an ED tracking system based on consecutive pts seen in our ED on Thurs./Sun. and Tue./Sat. Each coupled days utilized a different staffing model. Our ED “standard model” (DR) comprised of one physician coverage for 16 hrs combined with a second ED physician coverage for 12 hrs. Our “interventional group” (PA)

comprised of the same 16 hrs of ED physician coverage with the addition of 24hr (two overlapping 12 hr shifts) of PA coverage. Pt satisfaction scores were based on totaled averages of received Press Gainy scores, RVU equals relative value unit. Analysis was performed on each group respectively. All tests of statistical significance were conducted at $\alpha=0.05$.

RESULTS: Analysis of 44 different days was performed totaling 3836 pt encounters. There were 1876 pts enrolled in the DR model and 1960 in the PA model. (see Table).

CONCLUSION: ED LOS was not reduced with the PA model when compared to the DR model. No significant improvements were noted in the PA model with regards to billing or pt satisfaction score, although there was a higher acuity on PA days.

Doctor vs 2 Physician Extenders

	DR	PA	P value
Total Visits	1876	1960	NS
Mean Age	25	24.8	NS
Mean Acuity level	2.98	3.08	0.002
Admissions/Day	2.55	3.77	NS
Mean LOS (minutes)	111	113	NS
Mean RVU/pt	1.63	1.62	NS
Pct Male	55	54	NS
Pt satisfaction	90.8	88.3	NS

W228) Validation of three-level versus five-level emergency severity scale for prediction of hospital outcome of emergency patient : Sun Hwa Shin¹, Sang Do Shin¹, Hee Kang Choi¹, In Suk Kim¹ : 1. Emergency Medicine, Seoul National University Hospital, Seoul, Korea, South.

INTRODUCTION: An accurately applied triage scale can guide safe and appropriate care for emergency patients and cost effective use of emergency resources in a crowded emergency department (ED). We have used traditional three-level triage (TTT) since 2000. In recent years, many EDs in USA, Canada, UK, and Australia have accepted five-level triage scales like the Emergency Severity Index version 4 (ESI), which was developed by the American College of Emergency Physicians and Emergency Nurse Association of US. We tried to compare the discriminatory power of TTT and ESI for the prediction of hospital outcome. **METHODS:** This study was conducted from July 27 to August 30 (five weeks) in 2008 in an urban teaching ED. TTT (Emergency, Semi-emergency, and Non-emergency) and ESI (Critical, Emergency, Semi-Emergency, Non-Emergency, Delayed) was measured for all adult patients (15 years and older) by trained emergency nursing specialists. To compare the discrimination capability of TTT vs. ESI on hospital outcome, we calculated the Area Under the Receiver Operating Characteristic Curves (AUC) with 95% confidence interval (95% CI). **RESULTS:** The total number of patients was 3,371 (male 53.83%, mean age 51.87 years). Final results was as follows: discharge 66.33%, admission to general ward 23.14%, admission to intensive care unit 5.01%, transfer to other hospital 3.29%, and hospital death 1.19%. The AUC for moderate severity (admission to ward or ICU, transfer, or hospital mortality) was 0.686 (95% CI 0.684~0.723) in

TTT vs. 0.704 (95% CI 0.668~0.707) in ESI. The AUC for critical severity (admission to ICU or hospital mortality) was 0.820 (95% CI 0.786~0.854) in TTT vs. 0.842 (95% CI 0.809~0.874) in ESI. The AUC for hospital mortality was 0.819 (95% CI 0.757~0.893) in TTT vs. 0.833 (95% CI 0.775~0.895) in ESI. CONCLUSION: A five-level triage scale (ESI version 4) showed better discriminative performance than a traditional three-level triage scale for prediction of hospital outcome.

W229) Basic initial triage done by instructed volunteers is efficient and safe when supervised by professionals : Tom Ennekens¹, C. Boone¹, M. Smet¹, J. Stroobants¹ : 1. Emergency Medicine, ZNA Middelheim, Antwerpen, Belgium.

INTRODUCTION: Objectives: 1. Examination of the flow of patients at a high risk mass youth gathering by using initial triage criteria. 2. To find out if the minimum number of deployed medical personnel is safe. METHODS: A rave party with 15,000 young people (average age: 19 years old) took place in "Het Sportpaleis" in Deurne (Antwerp). Human resources consisted of 1 doctor, 2 nurses and 6 instructed volunteers in a medical station and another 12 volunteers on the field (amongst the crowd). The medical station was divided into 3 zones with an actor/supervisor system: Green zone (Nurse 1 as supervisor + Volunteers as actor); Yellow zone (Doctor as supervisor + Nurse 1 as actor); Red zone (Doctor/Nurse 2 as actor + 1 ambulance team). Patients were sent to one of the zones by using the following triage criteria: If the patient was walking around, fully alert and with a normal respiratory rate and capillary refill, he was put in the green zone. Patients who couldn't walk but were hemodynamically, respiratory and neurologically stable, were put in the yellow zone. The red zone was reserved for patients who couldn't walk around, had an altered conscious level, or who had an abnormal respiratory rate and/or a delayed capillary refill. RESULTS: 83% (N=124) of patients were seen in the green zone, 13% (N=20) in the yellow zone and 4% (N=6) in the red zone. There was one re-triage from green to yellow by the supervising nurse and two re-triages from yellow to red by the supervising doctor. CONCLUSIONS: There were only three medical professionals (1 doctor, 2 nurses) needed for the safe care of 15,000 young people. The initial triage criteria were effective: only 3 re-triages were needed, established by the supervisor of each zone. 1% of visitors needed medical care; 10% of these had drug related problems. Intoxication (both alcohol and drugs) was mainly seen in the yellow area. Both patients in the red zone had had an accidental intoxication. 50% of the workload of the medical team was due to alcohol and drugs. There was no significant additional workload on the public emergency health system.

W230) Olympic Games 2008 and Emergency Department Attendances : Gabrielle O'Connor¹, Anthony J. Martin¹ : 1. Galway University Hospital, Galway, Ireland.

INTRODUCTION: Our Emergency Department attendances normally increase during the summer months (July and August), which correspond with an increase in national and foreign visitors to the Region. A number of studies in the literature have shown a reduction in ED utilisation during varying sporting contest broadcasts. The 2008 Olympic Games were broadcast internationally from August 8th to 24th this year. Objective: To determine whether

the 2008 Olympic Games altered the attendance rates at our Emergency Department. METHODS: A retrospective review of patient attendances and demographic characteristics was examined over a three year period from 2006 to 2008 at a University Hospital Emergency Department. Data specifically identified included visitors attending the department. RESULTS: There was an increasing trend of attendances from 2006 to 2008 for the month of July (4382, 5384, 5543 respectively). The trend changed for the month of August however, with an increase from 2006 to 2007 and then a substantial decrease in 2008 (5025, 5608 5059 respectively). 32% (174 patients) of this decrease represented national visitors, while a further 8.4% (46 patients) represented overseas visitors. A reduction of 58.3% (320 patients) was noted during the 16-day broadcast of the 2008 Olympic Games. CONCLUSION: The 2008 Olympic Games potentially caused a substantial reduction in expected Emergency Department attendances. This is in keeping with similar data on other major sporting events.

W231) Changes in the Number of Claims in a Level 1 Emergency Department : Isabel Puente¹, Dolores Mendez¹, Carlos Clemente¹, Maria Teresa Martinez¹, Dolores Aranda¹, Jose Luis Alvarez¹, Francisco Del Baño¹, Silvia Laso de la Vega¹, Isabel Campodarve¹, Margarita Puiggali¹ : 1. Emergency, IMAS, Barcelona, Barcelona, Spain.

INTRODUCTION: If we are asked ourselves if we are good professionals, affirmative answers are generally provided, although patients and their relatives are really the persons who can better assess our competences. To this purpose, the Customer Service of our hospital is responsible for addressing all complaints and also acknowledgments related to our professional work. Objective: To assess the most frequent reasons for complaint in a level 1 Emergency Service. METHODS: The database of complaints for the years 2006, 2007 and 2008 were reviewed to determine the total number of complaints received. The Host program was used to determine the hours of the day for admission and discharge to assess whether or not delay-related complaints were justified. Data were processed with the Excel program. RESULTS: During 2006, 62 complaints were registered for a total of 21,802 patients attended in the Emergency Service, which accounts to 0.28%. In 2007, there were 60 complaints in 23,319 patients attended, which accounts to 0.25%. Finally, in 2008, 36 complaints for a total of 22,984 cases, that is 0.16% were received. The main reasons included: delay in the patient's care (41 cases, with a mean of 3 h and 35 min, range 33 min-9 hours and 40 min), inadequate manner on the part of the health care personnel (24 cases), and dissatisfaction with the care received (18 cases). Regarding delay in the patient's care, waiting time was less than 2 hours in 32.6% of the patients (11 cases). The mean age of the subjects who presented complaints was 46.6 years, and 60.3% were women. The person who made the complaint was the patient him/herself in 94 cases (84%) and a family member in 18 cases (16%). CONCLUSIONS: Satisfactory results were obtained because in 2008 there was a 58% reduction of complaints as compared with 2006. Complaints related to delay in the patient's care were justified in one third of the cases. The physicians followed by the nurses were the personnel who received more complaints related to inappropriate manner in the relationship with the patient. The majority of complaints were presented by the patients themselves and not by family members.

W232) First response teams in small towns and rural areas in Mures county : Vlad Nekula¹, Valentina Neacsu¹, Csenge Pito¹, Cristian Boeriu¹ : 1. Mures County Hospital, Tg. Mures, Romania.

Background:

The Romanian pre-hospital emergency system is based on a nationally organized ambulance service. An integrated system created in 1990 between the emergency department and the fire department in Mures county responded to critical cases using a mobile ICU and an helicopter. Since rescue services are concentrated in urban areas, response times to rural areas still takes over one hour with nerly no successful resuscitation of cardiac arrests in these areas.

Objective: The purpose of this study is to demonstrate that creation of fire department based first response teams decrease the response time to emergencies in rural areas.

Methods:

?We created fire department based first response teams with AEDs to serve rural areas in our county.

?The local authorities and the Ministry of Interior financed the emergency department mobile service.

?First response teams consisted of 3 providers, who trained during a three monperiod in our institution.

?Training of the providers included BLS, AED use, trauma protocols, telemedicine use, emergency tranport.

Results:

?Nine first response teams have been created since 1999 completing the emergency care system.

?The response times in rural areas have dropped from 30-60 minutes to less than 15 minutes.

?About 30% of Mures county is still underserved by our revised rescue service, requiring creation of more first response teams in the future.

Conclusions:

?The combination of the mobile ICU team (including here the helicopter) and the first response teams using firefighters trained as EMTs is feasible solution for a country such as ours.

?First response teams have significantly decreased response time to medical calls in rural areas, improving delivery of essential resuscitation to regions which were inadequately served.

W233) Prehospital management of severe head trauma in Slovenia

A questionnaire survey : Andrej Zmavc¹ : 1. Zdravstveni dom Celje, Celje, Slovenia.

INTRODUCTION: The Slovenian prehospital emergency medical service system consists of numerous emergency medical units, located within primary health care facilities. In cities there are prehospital emergency units called 'PHE', specialized for emergency medical interventions, while in smaller towns there are 'B' type units, organized within general/family medicine practices. PHE units cover nearly 60% of the state population. The main problem of the Slovenian prehospital EMS system until present is non-existing curriculum of emergency medicine. The specialization for physicians started in 2007. **METHODS:** In April this year the national board for emergency medicine sent a questionnaire to all prehospital EMS units. The aim was to determine the quality of care by asking a few simple questions on severe head trauma (SHT) management. SHT was chosen because it is a defined clinical state with existing

guidelines. RESULTS: 39/47 (83%) questionnaires were returned thus the survey is statistically relevant. The rates concern EMS units who returned questionnaires are as follows: 92% routinely measure GCS at the scene, 90% correctly define severe head trauma by GCS, only 10% have more than 15 SHT per year, 92% routinely determine blood pressure, 100% routinely determine oxygen saturation, 13% end tidal CO₂, in 97% an IV line is established routinely, in 82% a cervical collar is placed, 15% perform endotracheal intubation, 31% use paralytic agents and only 5% administer dopamine in severe non-hemorrhagic hypotension. CONCLUSION: SHT is not a frequent condition in our EMS units therefore relatively favorable results are almost surprising. But an endotracheal intubation to secure airway is still a problem in many units (particularly in smaller ones). An inconsistency is noticed in use of paralytic agents (higher rate of paralytics than intubations). Hypotension not due to haemorrhage, is not properly corrected in the pre-hospital setting. Additional training in emergency procedures is mandatory in smaller and even in some bigger EMS units.

W234) Ethics in Pre-hospital Emergency: Case Report : Diana Gomes¹, Ana Milheiro¹, Humberto Rebelo¹, Daniela Araújo¹, Marta Achando¹, Carmen Pacheco¹, Fátima Lima¹ : 1. Anesthesiology, Centro Hospitalar de Vila Nova de Gaia/espinho, EPE, Vila Nova de Gaia, Portugal.

BACKGROUND: Emergency medicine is quite different from office medicine, requiring immediate medical and ethical decisions. Aiming at competent patient care, promptness is required, always respecting the patient's wishes, which are threatened by the quickness of decision-making. With this clinical case report we highlight the ethical aspects of pre-hospital emergency. CASE: We present the case of an eighty-two years old patient with a past history of non-insulin-dependent diabetes mellitus, previously independent, practicing economist. He was diagnosed with a Mobitz block type II on a routine exam, with immediate indication for permanent pacemaker, denied by the patient. About one week later he asked for a second opinion, and again refused pacemaker insertion. Three days onwards he was home-assisted by the pre-hospital medical emergency team because of recurrent syncope. At our arrival the patient showed complete AV block and was hemodynamically compromised with 35 beatings per minute. After ineffective drug administration, precordial thumps were initiated. The family intended to respect the patient's will. An external pacemaker was placed after patient's allowance during a conscious period, which was achieved by thump pacing. At the hospital facility, a definite pacemaker was put in place and the patient was discharged without any deficits.

DISCUSSION: In a medical emergency patients are frequently taken against their will. When this will is previously known, the decision might be made easier. Nonetheless, as a readily reversible life threatening situation, our acceptance capacity is challenged. Life maintenance and resuscitation certainly are the most anguishing moments, representing the mainstay of emergency medicine.

W235) Diving medicine : Ulf Martin Schilling¹ : 1. Accidents and emergencies, Linköpings university hospital, Linköping, Sweden.

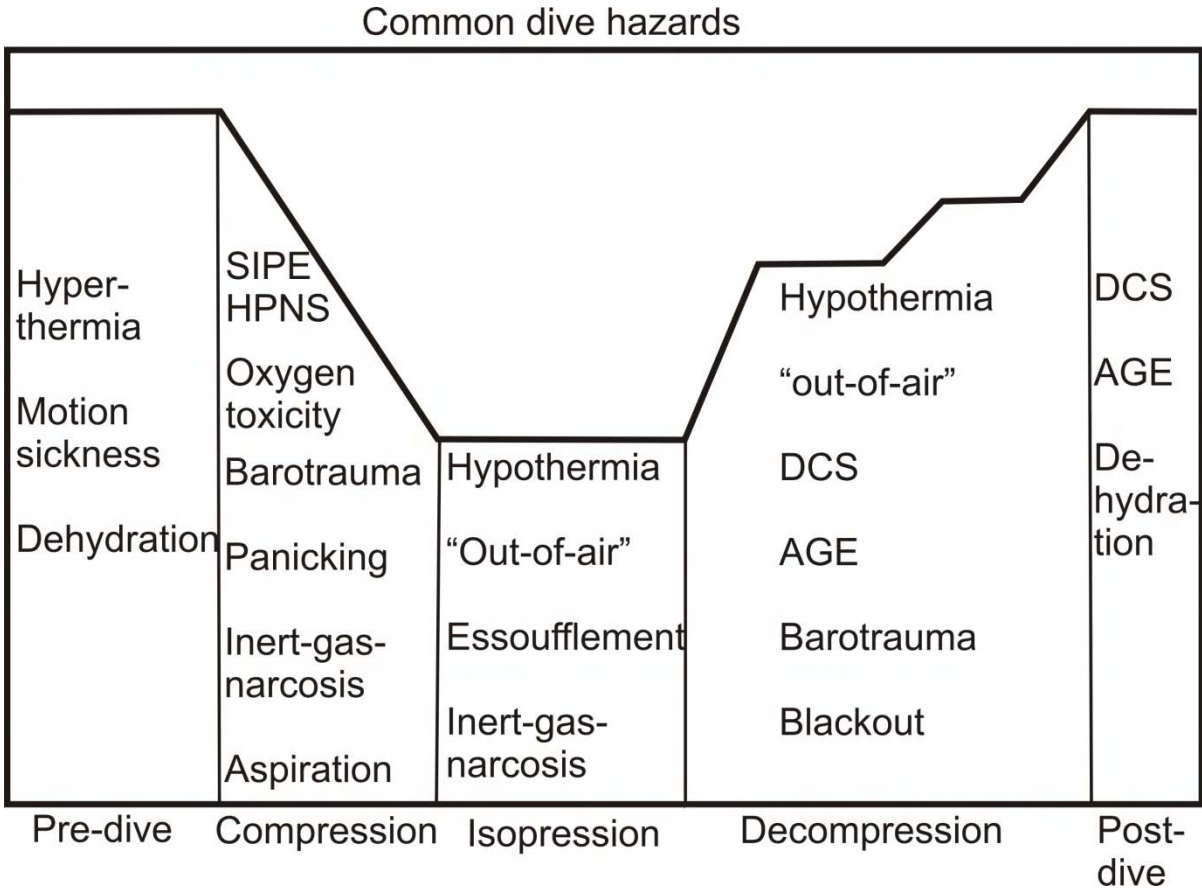
Diving medicine is a special field of medicine. Unfortunately, during primary and secondary

medical education no focus is put on diving medicine, and even during education in emergency medicine diving and hyperbaric medicine usually are not taught. Each year, approximately 30 million recreational dives are performed world wide. Diving accidents occur in approximately 1 of 5000 dives, and 1 of 10 diving accidents can be defined as severe.

Only by correct diagnosis and therapy of the emergency physician confronted with a diving accident unfortunate outcomes with severe handicap of the diver can be prevented. Thus, essential knowledge about the basics of diving medicine could be considered important for the diver.

In this 30 minutes lecture, the basic pathophysiological aspects of diving are explained in order as they may occur during a dive. The basic physics, physiology and pathophysiology of diving are explained by following a normal dive. The lecture is aimed for emergency physicians without previous knowledge in diving medicine.

Prediving hazards as hyperthermia and motion sickness, immersion related illness as swimming induced pulmonary edema (SIPE), compression related oxygen toxicity, inert gas narcosis, hypothermia, barotraumas including inverse barotraumas (essentially pulmonary, sinus and ear barotrauma), decompression sickness and arterial gas embolism are explained by their pathophysiology and therapeutic options. Arterial gas embolism and decompression sickness are emphasised. At the end of the lecture, the attending physician shall have gained sufficient knowledge about the major hazards of diving to assure the primary treatment and stabilisation of the most important potentially lethal and handicapping diving related complications.



W236) Romanian Guidelines for the Treatment in the Pre-hospital Phase of ST-Elevation Acute Myocardial Infarction

: Gabriel Tatu-Chitoiu⁴, Antoniu Petris⁴, Dan Deleanu⁴, Maria Dorobantu⁴, Raed Arafat², Valentin Georgescu³, Ovidiu Cismaru⁵, Mircea Oprisan⁵, Bogdan Oprita⁶, Carmen Diana Cimpoesu¹ : 1. Emergency Medicine, University of Medicine and Pharmacy Iasi, Iasi, Romania. 2. Romanian Society of Emergency Medicine and Disaster, Tg. Mures, Romania. 3. Romanian Resuscitation Council, Bucuresti, Romania. 4. Romanian Society of Cardiology, Bucuresti, Romania. 5. Romanian Association of Ambulance Services, Bucuresti, Romania. 6. Association of Emergency Medicine and Disasters, Bucuresti, Romania.

INTRODUCTION: Romania is situated in one of the top positions for Ischemic Heart Disease Death in Europe with a high mortality due to ischemic and cerebrovascular disease. It is a statistically proven concept that the card game of the STEMI patient is frequently played in the pre-hospital settings. The causes of failure in these situations include: a high incidence of malignant arrhythmias in the first few hours after STEMI onset, misinterpretation of the different patterns of haemodynamic instability with improper therapeutic interventions and late coronary reperfusion. Objectives: Our goals are to present our scientific efforts to establish new guidelines for the pre-hospital phase of STEMI and to assess the implementation phase with

educational tools. **METHODS:** 6 scientific societies and the associations from Cardiology and Emergency Medicine fields started work on these guidelines in 2007. We describe the phases of our work, the contents of the guidelines and the first results. **RESULTS:** Romanian Guidelines for the Treatment of the Pre-hospital Phase of the ST-Elevation Acute Myocardial Infarction was published in the Romanian Journal of Cardiology in September 2008 and as a pocket-book in February 2009. Guideline contents include 5 chapters: positive and differential diagnosis of STEMI in the pre-hospital setting, management of STEMI at the place of its onset including cardio-pulmonary resuscitation, EMS dispatcher protocol, monitoring and risk assessment of STEMI patient during medical transport, pre-hospital thrombolysis and reperfusion therapy. To promote the guidelines we organised 3 courses in 3 university centers with 850 participants: emergency physicians, cardiologists, internal medicine and GP's. **CONCLUSIONS:** A high percent of mortality in STEMI appears before reaching the hospital and imply a prompt intervention is needed. Guidelines and their implementation in daily practice can improve the survival rate of patients with STEMI.

W237) Crisis and emergency psychological intervention: guidelines for evaluation : Joana A. Faria¹, Maria Teresa M. Ribeiro², Teresa S. Reis¹, Márcio S. Pereira¹, Verónica C. Oliveira¹ : 1. National Institute of Emergency Medicine, Lisbon, Portugal. 2. Lisbon University - Faculty of Psychology and Educational Sciences, Lisboa, Portugal.

BACKGROUND: The literature on crisis psychological intervention reveals the importance of the intervention during and after the experience of potentially traumatic events with an effective immediate and qualified method (WHO, 2003). Accordingly with this recommendation many crisis intervention pre-hospital programs have been developed, but due to crisis intervention specifics (e.g. the impossibility to evaluate the individuals before the intervention) it has been difficult to evaluate properly these programs. Likewise, it is fundamental to develop guidelines for crisis intervention evaluation. Lambert & Hill (1994) suggest that immediate and long-term changes that result from the intervention process should be evaluated. Dziegielewski & Powers (2005) propose the utilization of both qualitative and quantitative methods for an efficiently crisis intervention evaluation. **DISCUSSION:** In this paper the authors will present an investigation design developed with the intent to evaluate the psychological crisis intervention performed by the psychologists from Psychological Support and Crisis Intervention Centre (CAPIC) of the Portuguese National Institute of Emergency Medicine (INEM). The core task of CAPIC is the psychosocial support in emergency situations and individual crisis through the Mobile Unit for Psychological Emergency Intervention (UMIPE) that is activated by the EMS Dispatch Centre and the psychological intervention takes place on scene. The evaluation of psychological intervention integrated on pre-hospital routines aim to increase the knowledge concerning which interventions are more effective in what kind of situations with what type of patient (Dziegielewski & Powers, 2005), promoting a more effective and helpful intervention for victims involved on potentially traumatic events. An attempt will be made to present guidelines for psychological crisis intervention evaluation that could be applied to other contexts of crisis intervention.

W238) Vegetative Phenomena in Epilepsy : Carmen N. Deva¹ : 1. UPU - SMURD Tg. Mures, Spital Clinic Judetean de Urgenta Tg. Mures, Targu

Mures, Romania.

BACKGROUND: Epilepsy is a frequent condition encountered in the emergency department, and various forms (such as sensorial and affective) are often wrongly diagnosed or missed entirely. **CASE:** A 61-year old woman with past medical history of hypertension, diabetes mellitus, and tobacco use was brought by ambulance to the emergency department of Tirgu Mures for frequent episodes of dyspnea and hyperventilation for 3 months, which had increased in frequency in the past 2 weeks. The episodes are accompanied by anxiety, chest pain, diaphoresis and shaking. Upon examination, the patient was anxious, diaphoretic, and tachypnic (respiratory rate was 22 breaths/minute). She appeared mildly dehydrated with dry mucus membranes. The other vital signs were normal. ECG was normal and chest x-ray showed cardiomegaly. The PO₂ on ABG was 67. Based on these findings the patient was diagnosed with worsening angina and left ventricular insufficiency. Intravenous access was obtained and the patient was placed on a cardiac monitor. The patient was treated with oxygen, nitroglycerin (2 sublingual doses), ACE-inhibitors, beta blockers, diuretics and heparin (due to suspicion of minor repetitive pulmonary emboli) and the patient was admitted to the hospital for further treatment and testing. Due to the fact that her symptoms did not respond to treatment, a neurologist was consulted and a non-contrast head CT was performed, which showed an area of old ischemic injury. A subsequent EEG confirmed the presence of a left irritating temporal focus secondary to the ischemic injury seen on CT. The patient was then started on anti-convulsant therapy, which resulted in a favorable outcome with resolution of her symptoms. The patient was discharged home in stable condition. **CONCLUSIONS:** Epilepsy is a frequent condition, with manifestations that include vegetative signs, which are very difficult to recognize due to their apparent association with other pathologies. It is therefore vital to always consider this epileptic manifestation as differential diagnosis to a dyspneic patient.

W239) Operators at the Regional Emergency Call Center in Lazio, Italy: Psychological Distress, and Prospects for Intervention : Chiara Gatti¹, De Luca Assunta¹, Antonio De Santis¹, Edrio Mechelli¹, Marinella D'Innocenzo¹ : 1. Health management, Regional Authority of Emergency Services (ARES 118) , Rome, Italy.

INTRODUCTION: The aim of this study, promoted by the management of the Regional prehospital Emergency Call Center (REC) of the Latium (central region of Italy), was to research in detail the principal manifestations of emotional distress and of compromises to psychological well-being that can threaten emergency call center operators, and highlights their possible causes. **METHODS:** We identified the individual, interpersonal, structural and organizational elements that singularly or in combination seemed to influence the characteristics observed. **Subjects:** Seventy operators at the Emergency Call Center, among nursing and administrative personnel. Methods included observations of the activities of call center operators and their interpersonal dynamics and behaviors. Interviews of the operators regarded both the technical aspects as well as the emotional and personal implications of their work. Written transcripts of the relevant factors were observed, analyzed and reported. Illustrations of the relationships among the wide variety of possible contributors to the effect (emotional distress) are examined and displayed with an Ishikawa diagram. Location:

Emergency Call Center of the city and county of Rome, Italy. RESULTS: Burnout was found to be the dominant psychopathology, into which all of the various elements of distress identified in the study converged (ex: hostility towards the caller and the organization, rejection, sense of uselessness). CONCLUSIONS: The specificity of these characteristics and the identification of protective and precipitating factors allowed us to establish interventions aimed at supporting the emotional well-being of the operators.

W240) Designing a Novel Simulator Pediatric Training Project for Emergency Medical Services (EMS) Staff in Italy : Niccolò Parri¹, Francesco Dojmi di Delupis², Giovanni Di Luccio², Letizia Conti¹, Robert Freitas³, Kevin M. Ban⁴ : 1. Emergency Department Anna Meyer Pediatric Hospital, Florence, Italy, Florence, Italy. 2. Emergency Medical Service 118 - ASL 10, Florence, Italy, Florence, Italy. 3. Harvard Medical Faculty Physicians, Boston, MA., Boston, MA, USA. 4. Emergency Department Anna Meyer Pediatric Hospital, Florence Italy and Harvard Medical Faculty Physicians, Boston, MA, Boston, MA, USA.

BACKGROUND: EMS in Tuscany is primarily provided by physicians, nurses, and other staff both employed and volunteers. The system is geared towards adults; only a small portion of the responses are for children. EMS providers interviewed expressed concern over treating injured children. Problem Definition: EMS staff are often ill-prepared for the medical needs of children due to infrequent exposure and limited training. One solution to this problem is to use a simulation-based training program. In 2007, Tuscany introduced high-fidelity simulation to the pre-hospital sector using a fixed-site simulation laboratory in Florence. Despite overall success, there were drawbacks. First, the site made it challenging for EMS crew around the region to participate since it often required substantial travel and missed work. Second, EMS crew members used generic equipment in an unfamiliar setting rather than the equipment they would use in an actual emergency. In order to overcome these problems, we propose this approach: rather than bringing EMS providers to us, we will take the simulation to them. Thus, we plan a 1-year study to assess the effectiveness of a mobile simulation unit to deliver training to EMS personnel where they work. Mannequins and electronic equipment, such as cameras, computers, and carts, would be transported by truck. The exercises would use clinical equipment from the particular site. A centralized coordinator would develop a schedule based on rotating the unit through Tuscany at least twice annually. Trained facilitators would accompany the unit to the sites to oversee the clinical scenario and to debrief the participants. We anticipate that outside grants, combined with funds from the Tuscan healthcare system, the main supporter of the project, will provide for the cost of the 1-year project. DISCUSSION: Pediatric emergency training using high-fidelity medical simulation specifically geared to EMS providers and delivered by a mobile unit will likely prove to be an innovative and cost-effective tool for providing training to a large number of clinicians dispersed over a sizeable geographic area.

W241) Prehospital Aneurysm Dissection Prevalence : Ruben Viejo Blanco¹, Carmen Barbero García¹ : 1. SAMUR PC, Madrid, Spain.

INTRODUCTION: The aortic dissection is a dilation secondary to the intima rupture with the bloodstream penetration and division to the aortic layer; it occurs in 2 of 10.000 person and it is

observed with more frequency in men among 40 and 70 years old. Our goal is to study the prevalence of this pathology in our service SAMUR-PC. OBJECTIVES: Descriptive study of the patients with suspicion of aorta aneurysm dissection in the last 6 years. METHODS: Descriptive study, cross-sectional and retrospective between 2001 and 2007 of critical cases, diagnosed with aorta aneurysm. We used the database of SAMUR-PC clinical cases, with inclusion criteria: grave patients transferred with diagnostic suspicion of: hypotension, syncope, cardiogenic shock, vascular disease without apparent diagnosis, arrhythmia and aortic dissection. RESULTS: We identified 36 cases, in a compatible population of 1050 on 3123 cases analyzed in 6 years (2001-2007). The mean age is 65,81 years, with 50% of the patients in 65 years and 75% of the patients in 78 years. 88,9% were men, 11.1% were female. The survival at 6 hours was 77.8%; 24 hour-survival was 66.7%, 7 day-survival was 63%. The reason for the call to 112 was: 40.7% nonspecific sign (dizziness), 29.6% precordial ache, 11.1% unconsciousness and a 18.5% for other causes. The initial vital signs for sample are a mean blood pressure of 130/75mmHg, mean heart rate 66 bpm and a respiratory frequency of 20 bpm. We analyzed the concordance between hospital diagnosis and prehospital suspected diagnosis: 20 cases were diagnosed of aneurysm in the SAMUR-PC, of which 11 were positive in hospital and 9 cases were negative. 16 diagnosed cases in hospital were not detected in the prehospital setting. CONCLUSIONS: In the prehospital setting there is a tendency to overdiagnosis with a frequency of false negatives of 61.29%, attributable tendency to the gravity of the presentation in the patients analyzed, but we can improve the diagnostic accuracy by reviewing again keys in the anamnesis the obtained vital signs in this study.

W242) The McKesson Prop - An Essential Tool for the Emergency Physician? : Adrian P. Murphy¹, Iomhar O' Sullivan¹, Stephen P. Cusack¹ : 1. Emergency Medicine, Cork University Hospital, Cork, Ireland.

BACKGROUND: Facial trauma is a commonly encountered presentation to emergency departments. When associated airway compromise occurs, co-existing head and neck injuries serve to produce a challenging clinical situation. **CASES:** We describe two patients who suffered multi-system trauma, with severe maxillofacial injuries that necessitated prompt definitive airway management and mid-face stabilisation in the Pre-hospital and Emergency Department phases of resuscitation. The McKesson prop is a simple, yet highly effective tool for use in these injuries.



McKesson Prop

W243) Blood Administration in Helicopter EMS (HEMS) Trauma Patients Worsens Hypothermia : Reed Brozen¹, Renata J. Wheeler¹ : 1. Dartmouth-Hitchcock Medical Center, Lebanon, NH, USA.

INTRODUCTION: Transfusion of red blood cells (RBCs) in the trauma patient can be lifesaving. The question is how much and when? It is important to weigh the risks and benefits of RBC transfusions, as these products are not benign. The risk of hypothermia, acidemia, hyperkalemia, and coagulopathy all increase with RBC transfusion. Trauma resuscitation research in the prehospital setting is associated with significant challenges; field location, need for refrigerated O Neg. blood in the ambulance, rapid decision making, and the consent process. Few HEMS programs give RBCs for these reasons. Increasing trauma mortality rates are known to be associated with hypothermia. Our HEMS system transfuses O Neg. RBCs if the patient remains unstable after 2 l of 0.9% saline as suggested by the American College of Surgeons Committee on Trauma guidelines for unstable trauma patients. We do not have a blood warming device. **Objective:** We attempt to determine if transfusing cold O Neg. blood in the HEMS prehospital setting causes trauma patients to arrive more hypothermic than patients who only received warmed NS in the trauma bay of our Level 1 Trauma Center.

METHODS: This was a retrospective review using our AeroMed Software and Trauma databases on all patients who arrived at our rural tertiary care University Hospital Level 1 Trauma Center by HEMS from the trauma scene from 1-1-2005 to 30-6-2009. Patient temperature on arrival was compared for patients who received RBCs by our HEMS service to those who did not. **RESULTS:** During the study period there were 3453 Trauma Team activations. Of these 720 were HEMS transports by our service. 37 (5%) received RBCs. 676 had adequate data for analysis. Patients who received RBCs had a temperature on arrival of 35.08 C (95%CI 35.06-35.10) versus 36.35 C (95%CI 36.34-36.36) for those who did not (P<.01). **CONCLUSION:** HEMS trauma patients who receive cold RBCs in our system arrive 1.27 degrees C colder than patients who do not receive RBCs. The clinical impact of giving RBCs in the HEMS prehospital setting was not determined.

W244) Resuscitation with intravenous small volume 7.2% NaCl/ 6% hydroxyethyl starch 200/0.5 in trauma patients during the prehospital period - evaluation of hemodynamic efficacy : Sofia Gama¹, Nadya Pinto¹, Ana Lufinha¹ : 1. Centro Hospitalar Lisboa Ocidental, Lisboa, Portugal.

Background and aim: The concept of the use of iso-oncotic hypertonic saline solutions is volume expansion with a significantly smaller volume of infusion, rise in cardiac work, improvement in microcirculation and attenuation of systemic inflammatory response. We evaluated the hemodynamic effects of the use of an iso-oncotic hypertonic solution of 7.2% NaCl/ 6% hydroxyethyl starch (7,2% NaCl/ 6% HES) during the prehospital resuscitation of trauma patients, since November 2005 til November 2008, by a prehospital team.

Material and Methods: Were included 28 patients with Revised Trauma Score between 0.5816 and 7.8408. Exclusion criteria were: age less than 16 years, pregnancy, heart failure and chronic respiratory disease. The following data were recorded: sex, age, type of occurrence, type of traumatic injury, initial Glasgow Coma Score (GCS) and vital signs. Vital signs (Heart Rate (HR), Systolic Blood Pressure (SBP) and Diastolic Blood Pressure (DBP)), were registered before administration of the fluid challenge (T0), 5 minutes after bolus

administration of 250 ml of iso-oncotic hypertonic solution of 7.2% NaCl/ 6% HES (T1) and 10 minutes after(T2). The volumes of crystalloids and colloids administered until the arrival to the emergency department were documented.

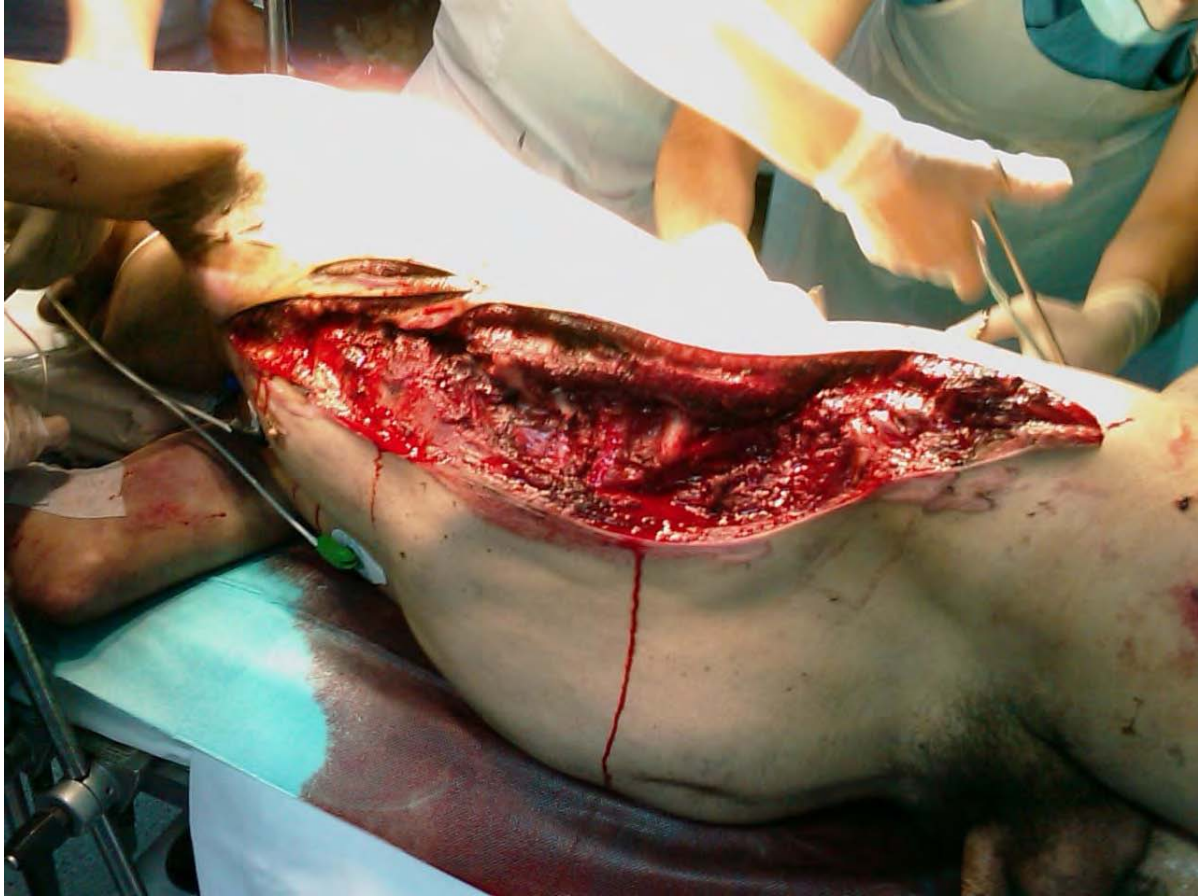
Results: In 28 patients, 86% were male and 14% were female, aged between 16 and 92 years. Traffic accidents were the most frequent occurrence (50%), and cranial trauma the most common lesion (64%). The initial GCS was between 3 and 15. Five minutes after administration of 250 ml of iso-oncotic hypertonic solution of 7.2% NaCl/ 6% HES, SBP increased significantly (31.25 ± 4 mmHg) accompanied by an increase in DBP (24.2 ± 3 mmHg). Parallel to the blood pressure restorations, HR decreased (17 ± 2 bpm). No adverse effects were observed.

Conclusion: The results of our study show that administration of iso-oncotic hypertonic solution of 7.2% NaCl/ 6% HES, in trauma patients is hemodynamically effective, without adverse effects. Larger trials are needed.

W245) Impact of procedures on the accident scene to the survival of major trauma victims: A case report : Natália Garrido¹, Lilia Ribeiro¹, Catarina Celestino¹, Diana Mota¹, Carla Barreto¹ : 1. Centro Hospitalar de Vila Nova de Gaia/ Espinho EPE, Vila Nova de Gaia, Portugal.

BACKGROUND: Trauma is the main cause of death during the first three decades of life; thoracic trauma is the main cause of trauma death in 25%. In cases of severe trauma, time is critical, hence the “golden hour”, and the prognosis “Platinum Procedures” will depend on the actions taken during that time. We describe a case of a polytraumatized patient in the pre-hospital setting with the coordination of all the intra-hospital resources.

CASE: A 51 years old, victim of a professional accident with a cutting object (propeller fan of an air conditioner) incurred thoracic and left abdominal trauma, rib fractures with lung exposure, diaphragm rupture, laceration until the iliac crest, wound in the right lumbar region and burns by friction on the left arm. On the accident scene: O2V2M5, SpO2 88%, RR 32 cpm, HR 140 bpm, AP 70/40 mmHg. Cervical immobilization and right selective orotracheal intubation was performed with etomidate 20 mg and morphine 10 mg. Fluid resuscitation injected by two venous accesses (14 G and 16G) with 1 L colloids solution and 1 L Ringer lactate. The transport of the victim completely immobilized, monitored, sedated with midazolam and manually ventilated, to the hospital, took 10 minutes. Emergency room was contacted during the transport to be prepared with cardiothoracic and general surgery. On arrival to the emergency room the victim was submitted to a multidisciplinary clinical evaluation and transferred to the operating room. The patient underwent an exploratory thoracotomy with suture of the diaphragm and thoracic drainage, laparotomy and suture of the left arm. The patient left the hospital after 50 days, with autonomy. **DISCUSSION:** Chest trauma is very common in polytraumatized patients and is the cause of life-threatening injuries, requiring early diagnosis and immediate action. The importance of a quick and systematic approach to the polytraumatized on scene of the accident is crucial and may improve the prognosis of the lesions, which is the main purpose of pre-hospital emergency care.



**W246) Acute chest pain in the prehospital setting : Silvio L. Aguilera¹, Carlos Campanini¹, Roberto Levy¹ :
1. EMS vittal, Buenos Aires, Argentina.**

INTRODUCTION: Cardiovascular disease (CVD), including coronary disease (CD), stroke and peripheral vascular disease, has an adjusted rate of mortality of 250 per 100,000 people and it represents 30 percent of Argentina's causes of death. Sudden death and chest pain are two of the most frequent ways in which CD is presented. Our EMS company performs more than 900,000 home medical attentions (HMA) out of which 20 percent are emergencies. Chest pain as the reason for request of HMA represents 11% of all calls classified as emergencies. 97% of these calls are from patients older than 14 years old. Objectives: To analyze chest pain patients' demand, to identify differences regarding sex and age, to identify final diagnoses, to interpret the frequency range and weekly schedule to determine the rate of institutional transfer.

METHODS: A descriptive retrospective study of 76,294 HMAs in patients older than 14 years old, where chest pain was the reason for the call during the period between January 2005 and May 2009. All patients were seen by physicians in intensive care mobile units (ICMU) and

EKG was done in 100% of cases. RESULTS: Response time was less than 15 minutes in 54% of the cases and less than 30 minutes in 89% of the cases. Regarding sex, the incidence was higher in women (55% versus 45%). 70.4% of patients were over 50 years old. The incidence over the day of the week had no differences. It showed a bimodal curve as compared to the hour of the day, with a greater seasonal occurrence during winter. The rate of transfer to hospital was 23%. 80% of patients were transferred with CVD diagnosis. The pre-hospital mortality rate was 0.62%. CONCLUSIONS: Chest pain is one of the most common symptoms for HMA with a low mortality rate in the pre-hospital setting. The presence of physicians in the ICMU and the protocols of HMA allowed 77% of the patients to remain at home. A prospective study was started to see how these patients progress.

W247) Football Stadium Emergencies : Manuel Filipe Serralva Alves¹, Nelson Coimbra¹, Brigitte Pereira¹, Joana Costa¹, João Dias¹ : 1. Bombeiros Voluntários Portuenses, Porto, Portugal.

BACKGROUND: Futebol Clube do Porto (FCP) is the most internationally successful football team in Portugal, it has an emergency care team (Emergency Medical Services Personnel) during all its ground sports field games.

There are approximately 40.000 spectators per game in FCP stadium, Estádio do Dragão. On the team there are 5 emergency physicians, 9 nurses and 40 paramedics on site for every game, to provide health and emergency care to all, both the spectators and the services on duty such as the football stewards and police. This team only offers assistance to the athletes in life threatening conditions, requiring critical intervention. The team belongs to a humanitarian association of Fireman from Porto, Bombeiros Voluntarios Portuenses. DISCUSSION: This article will examine the relationship that exists between the number of medical emergency calls and the air temperature, the precipitation, the relative humidity present in each game; and as well as the influence of decisive games on these calls.

W248) Prehospital Emergency System: a Turning Point for Traffic Accidents Morbidity and Mortality Rates : Atef Kanaan¹, Pedro Huertas¹, Andrés Santiago², José Antonio Sanchez², Pedro Martínez¹ : 1. Emergency Medical Service. SUMMA 112, Madrid, Spain. 2. Legal Medicine School.Universidad Complutense of Madrid, Madrid, Spain.

INTRODUCTION: In Spain, traffic accidents still cause more than 4000 annual deaths and approximately 150,000 injuries per year. Thus the high economic impact presents a challenge for public health since most injuries are preventable. METHODS: Main figures on Road Accidents Database of the National Observatory of Traffic Safety of Dirección General de Tráfico were used and the total accidents that occurred in Madrid-Spain in the years 2006 and 2007 were studied and statistical analyses of the incidence of major risk factors was evaluated and compared to previous data obtained in a study by the same authors about incidence of different health factors in traffic accidents in Madrid and shown below. RESULTS: Traffic accidents occur more frequently among male drivers aged between 15 and 44. When males and females are considered, the rate of traffic accidents was higher for the age group 25–34 in 2006 and for the age group 15–24 in 2007. Coming off the road is the most frequent type of accident: 24.6% and 27.8%, respectively. During weekends, the rate of accidents represents

approximately half that produced during weekdays. Fatigue or insufficient sleep was admitted in 3.2% in 2006 of the total of casualty accident victims. Among drivers' involved in accidents, asthma and high blood pressure were each noted in 6.6% in 2006, epilepsy and depression were each detected in 2.8% in 2007. Abuse of alcohol and cocaine were noted in 10.6% and 4% of drivers' involved in accidents in 2006. In 2007, drivers' abuse of alcohol and drugs was detected in 5.6% and 3.7%, respectively. CONCLUSION: Traffic accidents, especially coming off the road type, are more frequent among young adults and during weekends. Also, there is risky behaviour involved, such as driving under the influence of alcohol, abuse of drugs or having insufficient sleep or certain diseases.

W249) PREHOSPITAL FIBRINOLYSIS : Inmaculada Rabanaque Vega¹, Sergio Moreno Sanz¹ : 1. SUMMA112, Madrid, Madrid, Spain.

INTRODUCTION: Ischemic cardiopathy is the leading cause of mortality among men and the second among women. There is solid evidence of the benefit of chemical and also mechanical reperfusion in acute myocardial infarction with ST elevation (IAMEST). The delay from the start of the symptoms to reperfusion are directly related with survival. **OBJECTIVES:** 1) To know the IAMEST treated by prehospital fibrinolysis in the region of Madrid during 2007. 2) To know IAMEST not treated, although there was no contraindication. **METHODS:** Data from the RESCA study (National prehospital register of acute coronary syndrome). The variables studied are: age, sex, fibrinolysis, fibrinolysis contraindications. **RESULTS:** IAMEST 2007 Madrid region: 214 patients, age average: 65 years, sex: male 157 (73%), female 58 (27%). 16 (7%) treated with fibrinolysis. IAMEST 2007 Spain: 2276 patients, 609 (26.75%) treated with fibrinolysis. **CONCLUSIONS:** Percentage of prehospital fibrinolysis in Madrid region is well below the national average. Causes of this differences are: 1) Delay on arrivals to hospital A+E that makes angioplasty the first choice. 2) Lack of experience from the health professionals in the technique. 3) Lack of consensus between prehospital and hospital criteria.

W250) Mind the passengers : Luc J. Mortelmans¹, Jenny Luyts¹ : 1. Emergency Medicine, AZ KLINA, Brasschaat, Belgium.

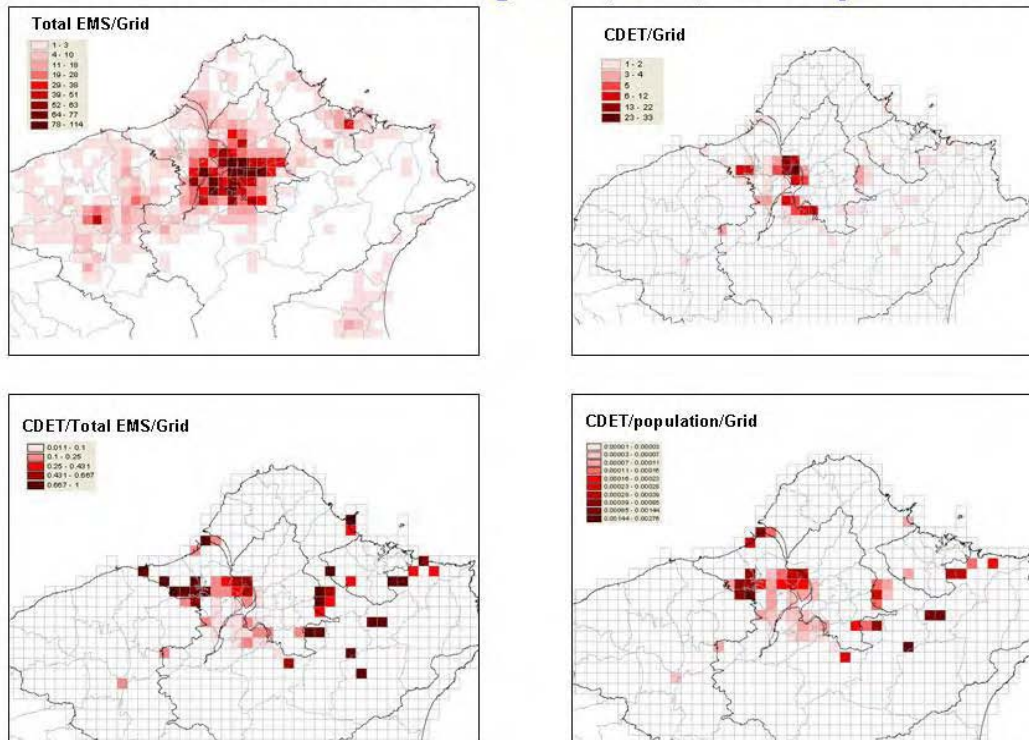
BACKGROUND: Prehospital care providers are trained to critically evaluate the load of trucks and vans in case of a traffic accident. A normal car, however, can also reveal some surprises. **CASE:** Our ambulance, the fire department and the police were sent to an intoxicated, unrestrained driver who drove his car into a tree. He seemed to be the only occupant of the car. During the primary survey in the vehicle the ambulance nurse suddenly faced a snake of approximately 50 cm long. All care providers left the car, the door was closed and the driver was interrogated on this matter. He told them that he had 7 royal pythons in his car. Although pythons are not venomous the commanding officer of the fire dept decided to contact the police to capture the snakes before continuing the extrication (The patient was stable but they felt unsure about the objectivity of the information from the intoxicated patient). 6 snakes could be captured, 4 of them from under the seat where the nurse had been working. Number seven was found on the premises of the hoisting service some weeks later. **DISCUSSION:** This case

illustrates that one should take caution on every intervention. The absence of warning signs or UN numbers is absolutely no guarantee that the car doesn't have any surprises on board.

W251) Spatial Distribution and Influence Factors of Cross-district Transports among Major Trauma in EMS System : Patrick Chow-In Ko¹, Matthew Huei-Ming Ma¹ : 1. Department of Emergency Medicine, National Taiwan University Hospital, Taipei, Taiwan.

INTRODUCTION: Objective: To analyze the impacts of spatial, time, and human factors on cross-district (CD) EMS transport (ET) of major trauma (MT). **METHODS:** From the National EMS Registry, we analyzed the data among 5 neighborhood districts. Three subjects were studied: (1) the amount and proportion of CDET for MT of each district; (2) spatial characters of CDET for MT, by utilizing GIS (Geographic Information System); (3) the correlation between time or human factors and CDET by regression and categorical analysis. Human factors were (i) patient or family's insistence, or (ii) EMS providers' decision, on the receiving hospital. **RESULTS:** Three major results: (1) a total of 6,235 EMS transports of MT occurred, inclusive of 389 CD ones. One district possesses the most cases (326, 83.8%) which accounts for 12.8% (95% CI: 11.6~14.2%) of its district-wide transports and is significantly higher than the other four (95% CI: 0~3.1%). (2) Among the 6,235 transports, EMS scenes were successfully positioned by GIS in 75.5% of cases. The CDET were clustered in certain locations and its characters were analyzed by GIS. (3) The ET time is not an influence factor on deciding CDET ($p=0.254$). Both human factors are significantly ($p<0.001$) correlated with CDET (patient/family's insistence: OR=2.8, 95% CI: 2.1~3.9, EMS providers' decision: OR=14.7, 95% CI: 9.8~22.0), especially in regions with longer CDET time compared with the non-CD. **CONCLUSION:** We indicate (1) Our EMS system demands CDET for MT, and the demands significantly varied among districts. Current EMS regionalization should be revised. (2) Utilizing GIS may comprehensively illustrate the spatial characters of CDET, target the exact regions of concern, and provide the spatial priority for revising regionalization. (3) Human factor, instead of time factor, impacts on the decision of CDET, especially among the regions where CDET consuming more time than the non-CD. For obstacles to restrict human factors, EMS should improve the efficiency of CDET, or to redefine the geographic jurisdiction of regionalization.

GIS spatial analysis for Cross-District EMS Transport (CDET) of Major Trauma

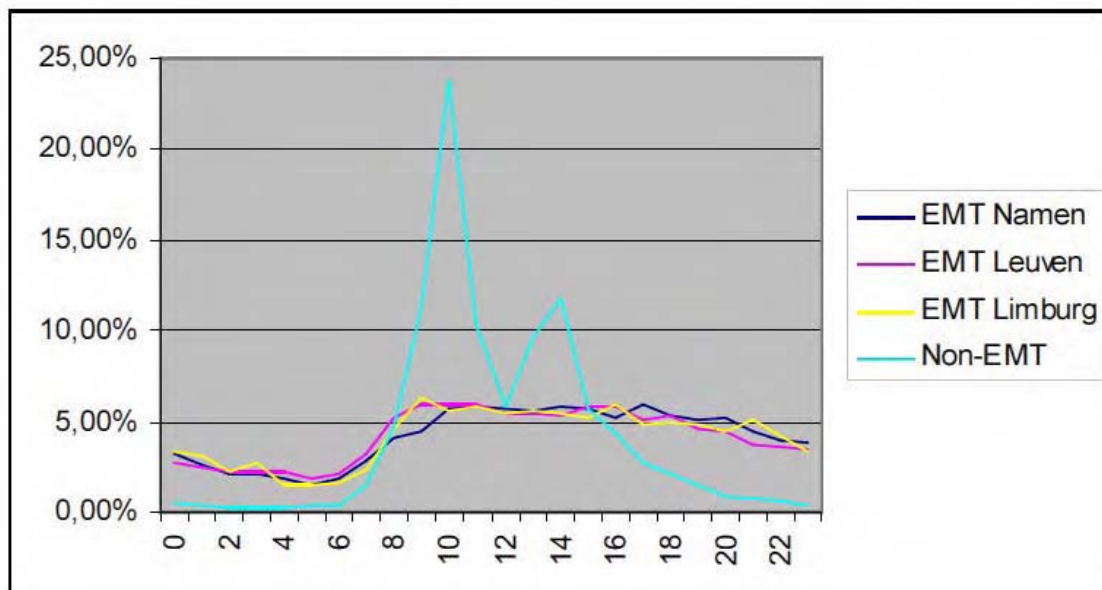


W252) Comparison of the need for ambulances for emergency medical transport versus non emergency medical transport : Dmitry Dorofey¹, Erwin Van den Eynden², Katia Machiels², Mike Smet¹, Jan Stroobants¹ : 1. ZNA Middelheim, Antwerp, Belgium. 2. Ministry Of Public Health, Brussels, Belgium.

INTRODUCTION: The objective of the study was to compare the need for ambulances in recumbent non emergency medical transport (NEMT) in Antwerp and recumbent emergency medical transport (EMT) in 3 other regions, all situated in Belgium. **METHODS:** During 2008 the need for ambulances for all recumbent NEMT were registered in Antwerp (n=15,094). Non recumbent emergency medical transport were excluded from the study. The need for ambulances, as a percentage, was calculated per hour during a 24 hour period. The distribution of need was then compared with the distribution of need for EMT calculated from data from 3 different regions in Belgium (n=36,912). **RESULTS:** There was a significant correlation between the different regions (c=0.925) for the distribution of need for EMT during a 24 hour period. The distribution of need for EMT differs significantly with that for NEMT, with peaks at 10 am and 2pm. The needs ratios of high needs versus low needs were 108.05/1 for NEMT and 4.25/1 for EMT per day. **CONCLUSION:** There is a difference in need for ambulances

between EMT and NEMT. If during the low needs of NEMT, the calculated sum of the need for NEMT plus the need for EMT is less than or equal to the need for EMT during the peak moment, then combining EMT and NEMT needs must be taken into consideration if the same quality of care is to be provided. In Antwerp this occurred between 6 pm and 8 am.

Diagram: Distribution of the need for ambulances during a 24 hour period.



W253) A success rate of an esophageal obturator airway use in a rural EMS system : Katsutoshi Tanno¹, Keigo Sawamoto¹, Ryoko Warabi¹, Kazuhisa Mori¹, Yasufumi Asai¹ : 1. Division of Traumatology and Critical Care Medicine, Sapporo Medical University, Sapporo, Hokkaido, Japan.

INTRODUCTION: Objectives: To determine the success rate of esophageal obturator airway (EOA) intubation and the reason for the failure in the prehospital setting of a rural area that includes 9 transporting emergency medical services (EMS) agencies and 22 ALS ambulances. METHODS: Prospective data were collected on patients for whom prehospital intubation was attempted between April 1, 2008, and March 31, 2009. EOA insertion was verified by emergency medicine attending physicians in the prehospital medical control council. A failed

intubation was defined as an extubation of a EOA tube. RESULTS: Three hundred ten cardiac arrest patients were enrolled of this study. Two hundred thirty-five patients had an attempted intubation, 10.6% (25/235) of patients had a failed intubation (laryngeal tube 9.8% (18 /184), Sumiway-WB (TM) 14.3% (7/49), Combitube (TM) 0% (0/2)). The reason for failed intubation was trismus (5 cases), difficulty with tube insertion (7 cases), ventilator defect (12 cases), and a spontaneous extubation. CONCLUSIONS: Overall intubation success rate was lower than we thought. It leads to a delay in resuscitation to try intubation for cases of trismus in particular. Our data support the need for ongoing monitoring of EMS providers' practices.

W254) The Use of Continuous End-Tidal CO₂ Prevents Hyperventilation of Intubated Trauma Patients : Ofer Faig¹, Alex Troncoso¹, Brian Walsh¹ : 1. Morristown Memorial Hospital, Morristown, NJ, USA.

INTRODUCTION: Prehospital studies have suggested that trauma patients are often hyperventilated after intubation, and that this hyperventilation may lead to poor neurologic outcomes. Our EMS program mandates that all intubated patients have continuous end-tidal CO₂ (ETCO₂) monitoring, and that all paramedics are trained thoroughly on the use of ETCO₂. We hypothesized that our trauma patients would not be hyperventilated, likely secondary to the use of continuous ETCO₂. METHODS: Design: Retrospective cohort. Setting: A suburban, hospital-based EMS system primarily serving three hospitals, including a level one trauma center. Protocol: The prehospital records of all trauma patients who were intubated in the prehospital setting by our advanced life support (ALS) providers between February 2007 and May 2009 were reviewed. The patient's initial ETCO₂ and final ETCO₂ on arrival in the ED were recorded. The difference between the two values was calculated with a 95% confidence interval. We defined hyperventilation as a drop in ETCO₂ of 5 or more and a final ETCO₂ less than 35. RESULTS: Between February 2007 and May 2009, 44 trauma patients were intubated prehospitally. The patients' average age was 42.6 years, 66% of which were male. The average initial GCS was 5.0 [95% CI: 3.9, 6.1]. Of the 44 intubated trauma patients, 31 (70%) had ETCO₂ measurements recorded. The average post-intubation ETCO₂ was 30.7 [95% CI: 25.3, 36.2]. The average ETCO₂ on arrival in the ED was 31.3 [95% CI: 27.0, 35.6]. The average difference between initial and ED arrival ETCO₂ was -0.6 [95% CI: -3.6, 2.4]. One patient (3%; 95% CI: 0%, 10%) was hyperventilated: a 38 y.o. male with head trauma after a MVC who was partially ejected and had a GCS of 3. His ETCO₂ went from 42 to 30. CONCLUSIONS: Although some studies suggest that trauma patients tend to be hyperventilated prehospitally, overall the trauma patients in our study were not found to be hyperventilated. The use of continuous ETCO₂ likely helps to minimize the tendency of ALS providers to hyperventilate trauma patients.

W255) Cardiopulmonary Reanimation of a Patient with Haemorrhagic Shock : Amela Komilija¹, Amra B. Zivadinovic¹ : 1. Emergency Medical Service Center, Sarajevo, Bosnia and Herzegovina.

BACKGROUND: Dying from trauma is directly dependent on the provision of adequate urgent medical assistance and the time elapsed from surgical assistance. The success of the surgical service and rescue of injured patient's life most depends on the procedures and actions

in the pre-hospital procedure. Over 50% of those injured from the breach of large blood vessels die on the spot from bleeding. As soon as possible compensation of lost intra-vascular volume is the main therapeutic procedure of haemorrhagic shock.

Respecting the basic postulates of urgent medicine we'll show that time is the important factor for rapid renewal of perfusion of tissues in order to prevent insufficiency of many organs.

CASE: We'll show the case of cardiopulmonary reanimation of a 22-years-old man who received mortal injuries from a stab with a knife in the deep femoral blood vessels. The decisive moment in the rescue was the arrival of urgent medical team within three minutes to the place of the accident. The young man was unconscious, without pulse and with agonal breathing, extremely pale skin and lay in his blood. Emergency basic and advanced cardiopulmonary reanimation with intensive treatment with medicines (I.V. cannula x 2, CPR, HES 6% 1000 ml, RingerL 1500 ml, Intubation, Ventilation, O₂, Adrenaline 1 mg x 4, Atropine 1 mg x 2, DC 200J, 300J, 3 x 360J) showed heart action on the monitor from BEA over asystole and VF to sinus tachycardia. During surgery the patient received 12 doses of blood and 3 doses of frozen blood plasma of corresponding blood groups. After less than a month of intensive care, vascular and physical therapy the patient is on the personal request released home. DISCUSSION: For successful resuscitation, time is the most important factor. The crucial moment is to start reanimation immediately and it's the key to success, with a quick compensation of lost intra-vascular volume in the case of haemorrhagic shock. This requires continuous education and training of Emergency Medical Teams.

W256) The Role of Head Computed Tomography in the Evaluation of Resuscitated Patients after Cardio-Respiratory Arrest : Liana C. Zaharia¹, Tiberiu Tudor¹, Cristian Boeriu² : 1. Emergency Department, Mures County Emergency Hospital , Targu Mures, Mures, Romania. 2. University of Medicine and Pharmacy, Targu Mures, Mures, Romania.

INTRODUCTION: Resuscitated patients who sustained a cardiac arrest in pre-hospital or in the emergency department, represent an important group treated in the Emergency Department of the Targu Mures Emergency County Hospital. Discovering the inciting cardio-respiratory arrest event, as well as the associated pathology is imperative for the post-resuscitation management of the patient. The indication and benefit of head CT in the resuscitated patients who sustained a cardio-respiratory arrest are not studied enough. METHODS: We undertook an evaluation of the use in our Emergency Department of head CT scan in patients resuscitated from cardio-respiratory arrest. We reviewed records for patients resuscitated in both pre-hospital and emergency department settings over a 2 year period (January 2007 – December 2008). Patients with traumatic cardiac arrest were not enrolled in the study. We recorded the information regarding the diagnosis, results of the head CT examination, management and outcome. RESULTS: We enrolled 196 resuscitated patients (mean age 60.5 years with 63% male), out of which 152 (77%) sustained their cardiac arrest in the pre-hospital setting. Head CT was performed in 77 individuals (mean age 60.4 years with 60% male). 44 (57%) patients demonstrated 71 head CT abnormalities, out of which 43 (61%) were of vital risk. The indication for head CT in the resuscitated patients with cardio-respiratory arrest was based either on high clinical supposition of non-traumatic intracranial lesion, or on the absence of any information regarding the cause of the arrest. CONCLUSION: Our study shows that 33% of the patients resuscitated in the pre-hospital setting where the primary cause of the arrest was

unknown, had head CT abnormalities of vital risk.

W257) THE TIME WE NEED FOR IMPLEMENTATION OF ERC GUIDELINES IN THE FIELD :
Amra B. Zivadinovic¹ : 1. emergency department, EmergencyMedicalServiceCenter, Sarajevo, KantonSarajevo, Bosnia and Herzegovina.

INTRODUCTION: Every 5 years ERC updates the guidelines for ACLS. The last guidelines were checked in 2005 at the Emergency Medical Service Center Sarajevo. Our objective was to evaluate how much time we needed to implement the guidelines for victims of adult cardiac arrest due to VF and pulseless VT. **METHODS:** By retrospective method we analyzed 84 patients who suffered out-of-hospital cardiac arrest during the period January 2006-May 2009. The source of information were protocols of emergency medical teams during this period. Patients with out-of-hospital cardiac arrest due to VF/pulseless VT as initial rhythm was included. Patients with transitory VF/pulseless VT during the treatment of other rhythms were excluded. **RESULTS:** In total 84 patients met inclusion criteria. The observed period has been divided into seven parts: six months lasting from January 2006 to December 2008 and five months lasting from January 2009 to May 2009. The ratio of compression and ventilation was successfully implemented from April 2006. For the administration of a single shock with 200 J (biphasic defibrillator) instead of three shocks in succession, the ratio of success was poor for the first 5 periods (16.7%; 0%; 20%; 22%; 20%). From June 2008 to May 2009 the results were much better (66.5%; 86%). Adrenaline was given after the third shock instead of before the third shock. Amiodarone was the first choice of antiarrhythmic drugs in high percentage (75%). **CONCLUSION:** We noticed that the implementation of new ERC guidelines for the protocols of treatment of out-of-hospital cardiac arrest due to VF/pulseless VT takes some time. The approach that C/V ratio 30:2 is easier to accept is correct. The single shock with lower level of energy took 2.5 years for implementation. The health care workers used higher levels of energy and three shocks in succession. Checking the heart rhythm, administration of the medications, iv access and inserting airway devices is part of routine treatment for victims of cardiac arrest. Some deviation in protocols were noticed and more practice and rigorous hands/on training is necessary.

W258) ARRIVAL WITH EMS DOES NOT PREDICT ADMISSION IN EXTREMES OF AGE WITH PALPITATIONS : **Howard Felderman**¹, **Stephen Shih**¹, **Brian Walsh**¹, **Jeffrey H. Luk**¹ : 1. Morristown Memorial Hospital, Morristown, NJ, USA.

INTRODUCTION: Patients arriving to the Emergency Department (ED) with palpitations should be evaluated quickly secondary to possible rapid deterioration in condition. Arrival with Emergency Medical Services (EMS) is considered to be a risk factor in this initial triage, although it is unproven to date. We sought to determine the significance of mode of arrival in patients with palpitations. **METHODS:** A retrospective analysis of all patients seen in four EDs in New York and New Jersey between November 1, 2004 and October 31, 2006 was conducted. A priori, these patients were subdivided into 20-year age groups (0-20, 21-40, 41-60, 61-80, >80). Patients with palpitations were defined as those assigned one of the following diagnoses based on ICD-9 codes: atrial flutter, atrial fibrillation, cardiac dysrhythmias,

palpitations, supraventricular tachycardia, tachycardia NOS, tachycardia ventricular, and Wolff-Parkinson-White Syndrome. We used admission to the hospital as a marker for severity of illness. We calculated the odds ratio (OR) and 95% confidence intervals for admission to the hospital for those who arrived with EMS versus those who arrived without EMS. RESULTS: Of the 231,219 patients in our database, 2,291 patients had a primary diagnosis of palpitations. Of these patients, 44 were excluded secondary to undocumented mode of arrival. The overall OR for admission in patients presenting with EMS is 2.884 [2.402-3.464]. In 0-20 age group, OR = 1.844 [0.294-11.582]; in the 21-40 age group, OR = 2.275 [1.287-4.022]; in the 41-60 age group, OR = 2.111 [1.457-3.060]; in the 61-80 age group, OR = 2.976 [2.095-4.226]; and in the >80 age group, OR = 1.367 [0.857-2.179]. CONCLUSION: Overall, arrival via EMS for patients with palpitations was associated with admission to this hospital. In the extremes of age, however, there was no significance to mode of arrival. The reason for this is unclear. While arrival by EMS may be used to triage patients with palpitations into a higher acuity, practitioners should realize that mode of arrival does not predict acuity for patients at the extremes of age.

W259) Intoxicated Patients Who Arrive With EMS Are Less Likely To Be Admitted To The Hospital Than Those Who Arrive By Other Means : David Sturm¹, Brian Walsh¹ : 1. Morristown Memorial Hospital, Morristown, NJ, USA.

INTRODUCTION: Emergency Medical Services are often utilized in the transport of patients acutely intoxicated with alcohol. It is often difficult to determine on initial presentation whether an intoxicated patient will need to be admitted to the hospital. No studies have been completed to date analyzing the morbidity of intoxicated patients arriving in the ED by EMS compared to patients who arrive by other means. Objective: We sought to determine whether an association exists between the mode of transport for patients suffering from alcohol intoxication and the admission rate for these patients. METHODS: A retrospective analysis of patients seen in four Emergency Departments in New York and New Jersey between November 1, 2004 and October 31, 2006 was conducted based on ICD-9 codes for "Alcohol intoxication" and "Alcohol abuse". We determined each patient's mode of arrival, either by EMS or other means. We then compared the admission rate of patients who arrived with and without EMS by calculating an Odds Ratio with 95% Confidence Intervals. RESULTS: 1615 patients were diagnosed with alcohol intoxication or alcohol abuse. 56% of these patients (908) arrived by EMS while 44% (707) arrived by other means. Among those patients who arrived by EMS, 15% (133) patients were either admitted to the hospital or transferred to another facility. Of those patients that arrived by means other than EMS, 31% (217) were admitted or transferred. Patients who arrived with EMS were significantly less likely to be admitted than those who arrived by other means. OR 0.39 (95% CI 0.30-0.49). CONCLUSIONS: Contrary to the popular assumption that patients who arrive in the ED by EMS are more acutely ill than those arriving by other means, patients with a diagnosis of alcohol intoxication or alcohol abuse were actually less likely to be admitted if they arrived by EMS. Further studies are needed to determine why this relationship exists and what social implications this may have.

W260) Factors Associated with Prehospital Delay in Acute Stroke : Woo Yeon Kim¹, Sun Hyu Kim¹, Eun Seog Hong¹ : 1. Ulsan University Hospital, Ulsan, Korea, South.

Purpose: Early hospital presentation is critical in the treatment of acute ischemic stroke with thrombolysis. The aim of this study was to investigate the factors associated with prehospital delay in acute ischemic stroke.

Methods: Data were retrospectively collected over a one year period from 247 acute ischemic stroke patients who presented to the emergency department (ED) within 7 days after symptom onset. To investigate the factors associated with prehospital delay, sociodemographic data, initial symptoms, risk factor, National Institutes of Stroke Scale in the ED, and use of emergency medical service (EMS) were evaluated. Univariate and multivariable analysis were used to evaluate delay factors.

Results: Of 247 patients (mean 64.4 ± 12.6 years, 149 male patients), the non-delay group (≤ 2 hr after symptom onset) included 45 patients (mean age 60.0 ± 13.1 , 31 male patients) and the delay group (>2 hr after symptom onset) included 202 patients (mean age 65.4 ± 12.3 , 118 male patients). Advanced age (odds ratio (OR) 1.056, 95% confidence interval (CI) 1.024-1.089), no consciousness disturbance at symptom onset (OR 2.938, CI 1.066-8.104), presentation on ED by self (OR 3.826, CI 1.580-9.624), referral from another hospital (OR 16.549, CI 5.216-52.509) or herbal institutes (OR 18.950, CI 1.465-245.175), worsened symptoms at the ED compared to symptom onset (OR 7.706, CI 1.558-38.121) were associated with a prehospital delay.

Conclusion: Elderly patients with progressive symptom worsening had delayed arrival, but those who used EMS or had disturbed consciousness at symptom onset had early arrival.

W261) Factors Affecting Delays in Intravenous Thrombolysis in Acute Ischemic Stroke : Sun Hyu Kim¹, Eun Seog Hong¹, Woo Yeon Kim¹ : 1. Emergency Medicine, Ulsan University Hospital, Ulsan, Korea, South.

Purpose: The aim of this study was to investigate the factors associated with prehospital delays in patients with acute ischemic stroke who are indicated to receive thrombolysis if arriving within 2 hours.

Methods: Data were prospectively collected from patients eligible for intravenous thrombolytic therapy if arriving within the therapeutic time window. Patients were divided into 2 groups depending on whether they arrived within 2 hours to understand factors associated prehospital delay.

Results: Of the 440 patients entered, 184 patients (41.8%) had no contraindications for thrombolysis except the time window. The non-delayed group had 27 patients (14.7%) and the delayed group had 157 patients (85.3%). In the delayed group, 40 patients (25.5%) had an

elapsed time from symptom onset to decision for medical help within 2 hour. rtPA was used in 13 patients (48.1%) in the non-delayed group and 8 patients (5.1%) in the delayed group. The delayed group was older and EMS was used more in the non-delayed group. Factors associated with prehospital delay after symptom onset were aggravation of symptoms, development of symptoms at home, and arrival to the ED alone or from other institutes. Those who had risk factor of atrial fibrillation arrived earlier at the ED.

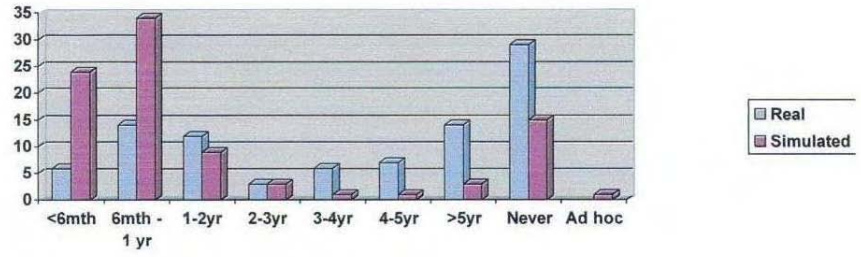
Conclusion: Early symptom recognition and arrival at the hospital are important in acute stroke. Further effort to improve these parameters should be made in terms of public health.

W262) What Training do we Receive in UK for Major Incidents? : Julie Thomson¹, Alexis Leal², Thomas F. Beattie² : 1. Royal Infirmary of Edinburgh, Edinburgh, United Kingdom. 2. Royal Hospital For Sick Children, Edinburgh, United Kingdom.

INTRODUCTION: There is an increasing potential for major incidents in the UK with increasing levels of trauma and the threat of terrorism. This study aimed to look at how we train our medical staff to deal with incidents and what experience we have in Emergency Departments. **METHODS & RESULTS:** 200 Emergency departments within the UK & Ireland were sent a postal questionnaire of which 91 forms were returned (45.5%) from a variety of hospitals including 6 paediatric only and 1 adult only department.

The majority of departments had simulated an incident in the past 2 years as per Graph 1. However, a third of departments have never experienced a real major incident. 53 departments (58%) had teaching at induction. 52 departments (57%) had annual practice. Of these 1 department had practice every 6 months and another monthly run through. 1 department has developed an annual elearning programme. 1 department had practice every 3 yrs. 51 departments (56%) have ad hoc practice. Teaching is lecture based in 52 departments (57%) and a table top exercise in 74 departments (81%). 50 departments (55%) have partial action and 20 departments (22%) have full action of incident. In all departments teaching is available to medical staff. 90 departments involve nursing staff and 69 departments involve auxillary staff. **CONCLUSION:** There is a wide variance on experience of dealing with a major incident. However, the majority of departments surveyed run simulated incidents frequently enough to ensure most staff are aware of the plans.

Graph 1. Implementation of Major Incident Plans



W263) How Prepared are the UK Emergency Departments for Children Involved in CBRN Incidents? : Julie Thomson¹, Alexis Leal², Thomas F. Beattie² : 1. Royal Infirmary of Edinburgh, Edinburgh, United Kingdom. 2. Royal Hospital For Sick Children, Edinburgh, United Kingdom.

INTRODUCTION: In a world where there is an increasing threat of terrorism it is important that in the UK we have established plans for CBRN incidents. Children are inevitably involved in such incidents and should be included in such plans. Our aim of this study was to review plans, decontamination facilities and methods to be used to decontaminate children in the ED.

METHODS & RESULTS: 200 Emergency departments within the UK & Ireland were sent a postal questionnaire of which 91 forms were returned (45.5%) from a variety of hospitals including 6 paediatric only and 1 adult only department. All departments had a major incident plan. However, not all departments had plans for CBRN incidents as shown in table 1. 84 departments (92%) had facilities for decontamination with 4 departments (4%) having separate facilities for children if required.

All departments used standard water based regime to decontaminate but 30 departments (33%) stated they would decontaminate as per adult protocol. 15 departments (16%) stated they would use parents and carers as able and 1 department specifically planned on using paediatric nursing staff for the under 5yrs age group. 1 department would use a small bath in < 1yrs old and another department a paddling pool. Only 1 department mentioned methods to avoid hypothermia in the young children and 1 mentioned providing modesty where possible in the teenage group.

CONCLUSION: Although most departments have specific plans for CBRN incidents very few have specific plans for children. This is a matter which would benefit from a national approach to making recommendations.

Table 1. Plans for CBRN Incidents

Incident	departmental Plans	Separate Plans for Children
Biological	70; 2 in process	6; further 6 with adult plan
Chemical	73; 1 in process	7; further 6 with adult plan
Radiation	68; 1 in process	5; further 6 with adult plan

W264) The Provision of Prehospital Teams for Paediatric Emergencies from United Kingdom Emergency Departments. : Julie Thomson¹, Alexis Leal², Thomas F. Beattie² : 1. Royal Infirmary of Edinburgh, Edinburgh, United Kingdom. 2. Royal Hospital For Sick Children, Edinburgh, United Kingdom.

INTRODUCTION: Worldwide there is increasing concern of major incidents with the changing climate of potential increased terrorist attacks. Children are likely to become involved in these incidents. The aim of this study was to look at the composition and paediatric experience of prehospital teams from UK emergency departments. **METHODS & RESULTS:** 200 Emergency departments within the UK & Ireland were sent a postal questionnaire of which 91 forms were returned (45.5%) from a variety of hospitals including 6 paediatric only and 1 adult only department. 45 departments (49%) had a structured prehospital team with a further 2 departments able to provide a team dependent on demand. All but 4 teams (9%) had a member with paediatric experience but little information was given on the extent of this

experience. 4 teams (9%) did not have an ED doctor on the team. The team leader in this instance was the consultant anaesthetist in 2 cases and anaesthetic registrar in 2 cases. All but 6 teams (13%) had a senior nurse from ED within the team. Emergency medical consultant was the most senior on 34 teams (72%) and registrar on 3 teams (6%) . 6 teams (13%) were led by individuals in emergency medicine with no paediatric experience. The composition of each team is shown in Table 1. CONCLUSION: We have demonstrated that there is no consistent make up of prehospital teams across the UK and Ireland. However, 82% have senior members of the emergency department within the team and the majority have some paediatric experience. Further work needs to be done to quantify this experience. It is worrying that 13% of teams are led by an individual with no paediatric experience.

Table 1 . Prehospital Team Composition

COMPOSITION OF TEAM	NO OF DEPARTMENTS
ED only	9
ED & Surgical	1
ED & Anaesthetics	8
ED & ICU	1
ED; Surgical & Anaesthetics	9
ED; Surgical; Anaesthetics & ICU	7
ED; Surgical & ICU	1
ED; Anaesthetics & Orthopaedics	2
ED; Anaesthetics & ICU	3
Ad Hoc	2
Anaesthetics & Surgical	2
Anaesthetics; Surgical & ICU	1
Anaesthetics; Surgical; ICU & Orthopaedics	1

W265) Major Incidents Involving Children - Is the UK Ready? : [Julie Thomson¹](#), [Alexis Leal²](#), [Thomas F. Beattie²](#) : 1. Royal Infirmary of Edinburgh, Edinburgh, United Kingdom. 2. Royal Hospital For Sick Children, Edinburgh, United Kingdom.

INTRODUCTION: There has been a recent upsurge in trauma and CBRN incidents worldwide and children are inevitably involved in such incidents. The aim of this study was to look at how prepared the UK is for dealing with children involved in such cases. **METHODS & RESULTS:** 200 Emergency departments within the UK & Ireland were sent a postal questionnaire of which 91 forms were returned (45.5%) from a variety of hospitals including 6 paediatric only and 1 adult only department. All 91 departments had a major incident plan, 87 of which included provision for children. 60 departments (66%) included them with adults and 23 departments (25%) had separate plans. 4 departments used a mixed approach. 45 departments (49%) managed children in a separate area to adults. 26 departments (29%) had a paediatric coordinator. 55 departments (60%) had prehospital paediatric equipment available and an

average of 20% of major incident equipment kept in departments was suitable for children. Most departments used a standard triage sieve to triage children as per table 1. 77 departments (85%) required transfer of patients for further care. All had pre-agreed transfer service and links with PICU retrieval teams. 1 department will transfer after the patient has stayed on ICU for 24 hours and 2 if demand exceeds their capability. 39 departments (43%) have crèche facilities for well children of staff and victims. 55 departments (60%) are able to provide a counselling service for children, staff and family. **CONCLUSION:** Most departments have included children in their plans for such incidents and have a structured approach to dealing with such cases. However, there is a lack of consistency on a regional basis.

Table 1 . Triage Methods

TRIAGE METHOD	No Of Dept
Paediatric Triage Tape	19
Standard Triage Tape	52
Combination of Paediatric Triage Tape & Standard Triage Tape	9
Paediatric Consultant - modified triage sieve and sort	1
Clinical Assessment by Senior ED doctor	1
Modified Manchester Triage	1
Ad Hoc	1
No Clear Plan	1
Other	6

W266) QUALITY IN PROCESS OF THE EMERGENCY MEDICAL CARE SERVICE : Aleksander Jus¹ : 1. Center for emergency medicine Maribor, Zdravstveni dom Maribor, Maribor, Slovenia.

INTRODUCTION: In this article the process of the emergency medical care service in the Rescue Services Maribor and its system of activity is presented. Shown is the significance of first medical care access time. The phases of access time and measuring of its components as well as the advantages of the project of Emergency medical technicians on motorcycles (motor medics) are analysed.

METHODS: On the basis of sample calls received at the centre 112 (Informing Centre) the average time for intervention of a call to the dispatcher at the emergency unit has been measured. With the support of a retrograde computer analysis the average time of talking was also measured – the taking of the emergency state anamnesis. The communication necessary for the activation of a team (internal telephone and USW) was measured. Also acquired from written and electronic documentation at the Ambulance Service Maribor was the time data on the driving interval of access time of a Pre Hospital Unit team, which are comparable with the study of the driving intervals of the Emergency Motor Medics. The access time, divided according to components, was compared for assessment of time differences. **RESULTS:** The results show that, in the system of emergency health care, time is lost in the component of reaction interval access, where the average exceeds the recommended time of international standards by three minutes and more. **CONCLUSION:** At all events, access time, beside the

effective survival chain, plays a decisive role in the most serious emergency situations. It was established that the Maribor Service for emergency medicine in comparison to similar intervention services in the developed world has well educated staff, as well as a good technical and material structure. However, access times are too long, which in part can be found in the fact that there are too few teams at certain time periods, but the main reason can be found in the organisation of emergency medicine and the dispatcher service. The results of the Motor Medics project, which is now being carried out for a second year in Maribor, are very encouraging.

W267) HOW ARE PSYCHOLOGICAL STRAINS AT WORK INFLUENCING THE QUALITY OF LIFE OF RESCUERS? : Aleksander Jus¹ : 1. Center for emergency medicine Maribor, Zdravstveni dom Maribor, Maribor, Slovenia.

INTRODUCTION: In the last decade major changes occurred in the field of medical care. The changes were inspired by changing relations toward an individual, community health and health care. Health care is getting more and more specialized and therefore conflict situations are common. To work under pressure causes mental problems to the medical staff and the result of pressure is stress and burn-out syndrome. The work and the development of urgent medical care is shown and the pressure on the rescuers work under. The most common mental problems, their signs and causes as well as their consequences are described. The results of the research on pressure level that rescuers meet at work, level of difficulty at work and the level of salvaging problems concerning the work are shown. With a questionnaire we tried to see which stress types have the most influences on the quality of life and how to reduce the level of pressure on the medical staff. **METHODS:** In the research 155 medical staff, with different educational degrees, and ages, were enrolled. All work in urgent medical centers in Slovenia. **RESULTS:** Results are presented on graphs, which show that the medical staff is under a lot of pressure at work and that their families can feel the consequences. **CONCLUSIONS:** This research is opening the possibility of detecting and observing the level of mental pressure on the medical staff at work.

W268) USE OF ALTERNATIVE DEVICES FOR DIFFICULT AIRWAY IN PREHOSPITAL SETTING : Jose Maria Navalpotro Pascual¹, Alonso Mateos Rodriguez¹, Luis Pardillos Ferrer¹, Francisco Peinado Vallejo¹ : 1. Servicio de Urgencias Medicas de Madrid SUMMA112, Madrid, Madrid, Spain.

INTRODUCTION: Difficult airway (DA) is defined as the clinical situation in which three or more attempts are required to achieve a successful airway management. The special features of prehospital assistance make it particularly frequent in this setting. The limited access to the patient and the patient position, as well as the scene itself, are all factors that may influence and complicate endotracheal intubation. However, there are alternative devices currently available that may replace endotracheal intubation. The present study was designed to investigate the use of alternate devices. **METHODS:** We conducted a descriptive, prospective study based on collection of data from all adult patients requiring endotracheal intubation. The following variables were evaluated: demographic data, access to patient, cause of intubation, Cormack

and Lehane classification, number of intubation attempts, use of alternative devices, failed intubation and patient outcome (alive or dead). RESULTS: 167 cases (60% men) were reported, with a mean age of 59 years (17-90). Most frequent cause for tracheal intubation was cardiac arrest in 63.2% of cases, followed by neurologic causes (15.8%), cardiac causes (10.5%), traumatic causes (5.3%). As established by DA definition, more than three intubation attempts were required in 23.2% of the cases. In total, alternative devices were used in 21% of the cases: 3% for scores 1/2 according to Cormack and Lehane's classification, 36% for score 3 according to Cormack and Lehane classification, and 57.9% for score 4 according to Cormack and Lehane classification; these associations were not statistically significant. The use of alternative devices was not significantly associated with either the access to patient ($p=0.51$) or patient outcome (alive or dead) ($p=0.35$). CONCLUSION: Alternative devices for airway management are widely used in the prehospital setting due to the high incidence of DA. Additional studies are required to elucidate the reasons for it, but it may be assumed that the prehospital setting itself is a significant factor influencing DA.

W270) Comparison of Glidescope® Video Laryngoscope (GVL) and Intubating Laryngeal Mask Airway (I-LMA) with Direct Laryngoscopy (DL) for Paramedic Endotracheal Intubation: A Manikin Study : Orhan Cinar¹, Osman A. Yildirim¹, Erdem Cevik¹, Mehmet Yasar¹, Serkan Bilgic¹, Erden Kilic¹, Murat Durusu¹, Bilgin Comert¹ : 1. Emergency Medicine, GATA, Ankara, Turkey.

INTRODUCTION: Endotracheal intubation is the optimal method of managing the airway during cardiac arrest. However the conventional direct laryngoscopy (DL) method that is routinely used for intubation can not be applied successfully in prehospital care because of several limitations. GVL and i-LMA are two different methods that can be use as an alternative to DL intubation. The aim of this manikin study is to test if these two methods can improve intubation success rate and also how easily paramedics can learn and apply the methods when compared with the DL method. METHODS: 121 paramedic students participated in this prospective randomized crossover study. The goal was for all participants to intubate each Ambu® Airway Management Trainer manikins in 60 seconds. Intubation was considered successful when the tube was seen passing through the vocal cords and the intubation time was recorded. At the end of the study a survey questionnaire was given to all participants about their preferences and to define each method on a ease-difficult scale. (Likert scale:1=Very easy,5=Very hard). RESULTS: Intubation success rates were 95 (78.5%) for DL, 112 (92.6%)for i-LMA, 111 (91.7%) for GVL. The mean times required for intubation were 25.06 ± 14 seconds for DL, 22.63 ± 10 seconds for i-LMA and 22.63 ± 10 seconds for GVL. The mean points of ease-difficult scale were 2.54 for DL, 1.64 for i-LMA and 1.84 for GVL. 67 participants (55.4%) preferred i-LMA as their first choice, 41 participants (33.9%) preferred GVL and 13 participants (10.7%) preferred DL. When we compared the methods i-LMA and GVL were significantly more successful than DL. ($p=0.005$ and $p=0.006$ respectively). There were no differences between i-LMA and GVL for successful intubation ($p>0.05$). Intubation times were similar among the 3 methods. DL method was found more difficult than i-LMA and GVL. i-LMA was found to be easier than GVL. CONCLUSIONS: This study demonstrates that intubation with GVL and i-LMA are both easier and more successful than the classic DL for paramedics.

W271) Periodical evaluation by Utstein-style reporting templates in EMS Prague : Milana Pokorná¹, Jiri Danda¹, David Kotyza², Pavel Trnka² : 1. EMS Prague, Prague, Czech Republic. 2. KTTTP Ltd, Prague, Czech Republic.

INTRODUCTION: In spite of considerable efforts to improve the treatment of cardiac arrest, survival outcome from cardiac arrest stagnate. If patient outcomes are to improve, then the long term evaluation is essential. The Utstein-style reporting templates have been used extensively in published outcome studies, so this is why we have established the Utstein-style core data as the bases for long-term evaluation of cardiopulmonary resuscitations in our EMS. **Objective:** To establish standardized, on line register of the cardiopulmonary resuscitations provided by EMS Prague. **METHODS:** First of all EMR system for EMS providers was upgraded, which included obligatory and optional questions about all treated patients. The obligatory questionnaire for resuscitated patients contains Utstein-style core data elements and diagnosis. Obligatory data for not resuscitated patients are connected with the parameters of MEES and NACA score evaluation. The new web based application, which is able to search for resuscitated patients from all electronic medical records, and visualize on line Utstein-style data, has thus been prepared. **RESULTS:** 1th January - 30th April 2009. Absence of signs of circulation: 1146 records. Resuscitation not attempted 932. Resuscitation attempted 214. Any defibrillation attempt 65. Chest compression 205. Assisted ventilation 193 (Intubation 184). First monitored rhythm: Shockable 40 (VF 38, VT 2), Nonshockable 139 (Asy 120, PEA 19), Unknown 1, Other 34. Outcome: Any ROSC- Yes 93, No 121; Survived event 81. Survived 1 month: CPC 1=13, CPC 2=1, CPC 3=5, CPC 4=4, CPC 5 =4, information not available = 51. Location of CA: Home 127, Public place 62, Other 25, Hospital 0. CPR before EMS arrival: Yes 114, No 47, witnessed by EMS 53. Arrest witnessed: by layperson 138, by healthcare personnel 58 (53 by EMS), not witnessed 18. Etiology: Presumed cardiac 138, Trauma 16, Submersion 0, Respiratory 12, Other non cardiac 34, Unknown 14. The poster will present the results in diverse ways. **CONCLUSION:** Periodical evaluation by Utstein-style reporting templates in EMS Prague gives us a possibility to observe long-term outcome trends.

W272) COMPARISON OF GERMAN PREHOSPITAL PHYSICIAN PRACTICE TO PARAMEDIC PROTOCOLS : Damian MacDonald¹, Susanna Sellin², David Cone³ : 1. Northern Ontario School of Medicine, Toronto, ON, Canada. 2. Charité Universitätsmedizin Berlin, Berlin, Germany. 3. Yale University School of Medicine, New Haven, CT, USA.



INTRODUCTION: Prehospital care in Europe and America is rendered using two different models. In American systems, standing orders guide prehospital providers. In Germany, EMS physicians directly perform interventions. The objective was to determine whether the interventions performed by German EMS physicians are available in a typical U.S. city using indirect medical oversight. **METHODS:** Consecutive run forms from EMS physicians in a district of Berlin were abstracted into a database, including demographics, presenting complaint, interventions, and diagnosis. Dispatches that resulted in patient contact and a diagnosis were included. Interventions for common diagnoses were compared to paramedic protocols in a U.S. city of 125,000 people. **RESULTS:** 1105 run forms (97% of dispatches) were analyzed; 584 met inclusion criteria. The

most common diagnoses were angina pectoris (13%), field pronouncement (12%), MI (10%), asthma/COPD (9%), arrhythmia (6%), hypoglycemic coma (6%), seizure (6%), pulmonary edema (5%), and trauma (5%). For angina pectoris (n=77), 402/455 interventions (88%) are available in the standing orders of the comparison U.S. city. Interventions not available include heparin (57% use in Berlin) and metoclopramide (12%). For MI/ROMI (n=48), 221/296 interventions (75%) are covered; not covered are heparin (85%), metoprolol (19%), thrombolysis (13%) and metoclopramide (40%). For asthma/COPD (n=51), 104/241 interventions (43%) are included in the paramedic protocols; not included are steroids (86%), terbutaline (41%), and theophylline (76%). For arrhythmia 110/123 interventions (89%) are covered. All interventions for hypoglycemic coma (81/81) are covered, as are 136/150 (91%) for pulmonary edema. In trauma, 117/144 (81%) are covered; exceptions are sedation (37%), colloids (31%), and RSI (9%). **CONCLUSIONS:** Interventions performed by German EMS physicians are available through standing orders in a typical U.S. system. Exceptions are found in asthma management; use of antiemetics; pre-hospital heparinization, thrombolysis, and beta-blockade in suspected MI; and rapid sequence intubation.

Comparison of German Pre-Hospital Physician Practice to Paramedic Protocols and Paramedic Practice

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Background
Pre-hospital care in Germany and the U.S. is rendered using two different models. In American systems, patient care protocols and standing orders guide non-physician pre-hospital providers. In Germany, EMS physicians directly perform interventions. The objective of this study was to determine whether the interventions performed by German EMS physicians for the most common diagnoses in their system are available to paramedics in a typical U.S. city using indirect medical oversight.

Berlin EMS
ALS staffed by physicians or cardiologists with 100 experienced calls / no protocols
1 ALS helicopter
14 ALS ground units
78 BLS ambulances
Central dispatch center
ALS dispatched for worst key conditions - unstructured interview
Two-level response with BLS
Concentrations of ALS by BLS possible
City population: 3,520,000

New Haven EMS
ALS staffed by paramedics
NHTSA EMT-P certification 1200 h
10/14 ALS ambulances
04 BLS ambulances
Dispatched per time of day
Registered dispatch centers
ALS dispatched per structured interview
Two-level response with BLS
Concentrations of ALS by BLS possible
County population: 865,000

Methods
Consecutive patient care reports (PCR) of EMS physicians in a district of Berlin and paramedics in New Haven from 1/15-3/15 2005 were abstracted into a database, including demographics, presenting complaint, interventions, and diagnosis. Inclusion criteria in Berlin were all physician (ALS) dispatches that resulted in a diagnosis. In New Haven all ALS dispatches that resulted in ALS care and transport to Yale New Haven Hospital were included. The most common physician diagnoses were matched with paramedic assessments. German physicians' measures were compared to paramedic protocols and interventions.



Results
Berlin: 1,106 PCR reviewed (97% of dispatches), 584 included
New Haven: 2,356 PCR reviewed (73% of dispatches), 1,537 included

ALS canceled by BLS in Berlin

Diagnosis	Berlin (%)	New Haven (%)
Angina/MI	100	100
Asthma/COPD	100	100
Arrhythmia	100	100
Seizure	100	100
Hypoglycemic coma	100	100
Pulmonary edema	100	100
Trauma	100	100
Stroke	100	100
Other	100	100

Demographics

City	Sex	Median Age	Average Age	Total
Berlin	Male	78	66	263
	Female	66	61	288
New Haven	Male	51	44	820
	Female	44	45	717

Chief Complaints

Berlin

- Angina/MI: 13%
- Asthma/COPD: 12%
- Arrhythmia: 6%
- Seizure: 6%
- Hypoglycemic coma: 6%
- Pulmonary edema: 5%
- Trauma: 5%
- Stroke: 5%
- Other: 48%

New Haven

- Angina/MI: 10%
- Asthma/COPD: 9%
- Arrhythmia: 6%
- Seizure: 6%
- Hypoglycemic coma: 6%
- Pulmonary edema: 5%
- Trauma: 5%
- Stroke: 5%
- Other: 44%

Most Common German Physician Diagnoses

Diagnosis	Percentage
Supraventricular	12%
First Premortem	12%
Asthma/COPD	9%
Myocardial Ischemia	9%
Cardiomyopathy	6%
Stroke	6%
Seizure	6%
Hypertension	6%
Diabetes	6%
Other	23%

Most Common Interventions
German EMS physician interventions are color coded per the following legend:

Intervention	Available to Paramedics (%)	Available to Paramedics (n)	Used by German EMS (%)	Used by German EMS (n)
Aspirin	100	1537	100	1537
Atropine	100	1537	100	1537
Epinephrine	100	1537	100	1537
Glucagon	100	1537	100	1537
Metoprolol	100	1537	100	1537
Normal Saline	100	1537	100	1537
Oxygen	100	1537	100	1537
Respiratory Support	100	1537	100	1537
Sedation	37	568	100	117
Thrombolysis	13	200	100	61
Other	100	1537	100	1537

SEIZURE

Intervention	Available to Paramedics (%)	Available to Paramedics (n)	Used by German EMS (%)	Used by German EMS (n)
Oxygen	100	1537	100	1537
Atropine	100	1537	100	1537
Glucagon	100	1537	100	1537
Metoprolol	100	1537	100	1537
Normal Saline	100	1537	100	1537
Oxygen	100	1537	100	1537
Respiratory Support	100	1537	100	1537
Sedation	37	568	100	117
Thrombolysis	13	200	100	61
Other	100	1537	100	1537

ANGINA/MI

Intervention	Available to Paramedics (%)	Available to Paramedics (n)	Used by German EMS (%)	Used by German EMS (n)
Heparin	57	856	100	77
Oxygen	100	1537	100	1537
Atropine	100	1537	100	1537
Glucagon	100	1537	100	1537
Metoprolol	19	290	100	48
Normal Saline	100	1537	100	1537
Oxygen	100	1537	100	1537
Respiratory Support	100	1537	100	1537
Sedation	37	568	100	117
Thrombolysis	13	200	100	61
Other	100	1537	100	1537

PULMONARY EDEMA

Intervention	Available to Paramedics (%)	Available to Paramedics (n)	Used by German EMS (%)	Used by German EMS (n)
Oxygen	100	1537	100	1537
Atropine	100	1537	100	1537
Glucagon	100	1537	100	1537
Metoprolol	100	1537	100	1537
Normal Saline	100	1537	100	1537
Oxygen	100	1537	100	1537
Respiratory Support	100	1537	100	1537
Sedation	37	568	100	117
Thrombolysis	13	200	100	61
Other	100	1537	100	1537

TRAUMA

Intervention	Available to Paramedics (%)	Available to Paramedics (n)	Used by German EMS (%)	Used by German EMS (n)
Oxygen	100	1537	100	1537
Atropine	100	1537	100	1537
Glucagon	100	1537	100	1537
Metoprolol	100	1537	100	1537
Normal Saline	100	1537	100	1537
Oxygen	100	1537	100	1537
Respiratory Support	100	1537	100	1537
Sedation	37	568	100	117
Thrombolysis	13	200	100	61
Other	100	1537	100	1537

ASTHMA/COPD

Intervention	Available to Paramedics (%)	Available to Paramedics (n)	Used by German EMS (%)	Used by German EMS (n)
Salbutamol	44	665	100	51
Oxygen	100	1537	100	1537
Atropine	100	1537	100	1537
Glucagon	100	1537	100	1537
Metoprolol	86	1300	100	51
Normal Saline	100	1537	100	1537
Oxygen	100	1537	100	1537
Respiratory Support	100	1537	100	1537
Sedation	37	568	100	117
Thrombolysis	13	200	100	61
Other	100	1537	100	1537

HYPOGLYCEMIC COMA

Intervention	Available to Paramedics (%)	Available to Paramedics (n)	Used by German EMS (%)	Used by German EMS (n)
Glucose	100	1537	100	1537
Oxygen	100	1537	100	1537
Atropine	100	1537	100	1537
Glucagon	100	1537	100	1537
Metoprolol	100	1537	100	1537
Normal Saline	100	1537	100	1537
Oxygen	100	1537	100	1537
Respiratory Support	100	1537	100	1537
Sedation	37	568	100	117
Thrombolysis	13	200	100	61
Other	100	1537	100	1537

DYSRHYTHMIA

Intervention	Available to Paramedics (%)	Available to Paramedics (n)	Used by German EMS (%)	Used by German EMS (n)
Oxygen	100	1537	100	1537
Atropine	100	1537	100	1537
Glucagon	100	1537	100	1537
Metoprolol	23	350	100	48
Normal Saline	100	1537	100	1537
Oxygen	100	1537	100	1537
Respiratory Support	100	1537	100	1537
Sedation	37	568	100	117
Thrombolysis	13	200	100	61
Other	100	1537	100	1537

HYPERTENSION

Intervention	Available to Paramedics (%)	Available to Paramedics (n)	Used by German EMS (%)	Used by German EMS (n)
Oxygen	100	1537	100	1537
Atropine	100	1537	100	1537
Glucagon	100	1537	100	1537
Metoprolol	100	1537	100	1537
Normal Saline	100	1537	100	1537
Oxygen	100	1537	100	1537
Respiratory Support	100	1537	100	1537
Sedation	37	568	100	117
Thrombolysis	13	200	100	61
Other	100	1537	100	1537

Interventions found in paramedic protocols

Intervention	Used by German EMS (%)	Used by German EMS (n)
Oxygen	100	1537
Atropine	100	1537
Glucagon	100	1537
Metoprolol	100	1537
Normal Saline	100	1537
Oxygen	100	1537
Respiratory Support	100	1537
Sedation	37	568
Thrombolysis	13	200
Other	100	1537

Discussion

- German EMS physicians use a number of interventions contained in U.S. paramedic protocols.
- German EMS physicians make use of their broader scope of practice in...
 - Asthma: early steroids and IV β-agonists
 - Trauma: RSI, analgesia, antiemetics
 - MI: heparin, thrombolysis, β-blockade, morphine
 - liberal use of antiemetics
 - Paramedics are more likely to provide
 - Oxygen and EKG monitoring

Limitations

Quality of charting
 Different demographics: age, urban setting
 Matching of diagnosis and assessment
 Comparison to only one paramedic protocol
 e.g. RSI is available in some U.S. systems

Conclusions

Interventions commonly performed by German EMS physicians for the most frequent conditions they encounter are available to paramedics through standing orders in a typical U.S. comparison area. Exceptions were found in analgesia, management of asthma; use of antiemetics; pre-hospital heparinization, thrombolysis, and beta-blockade in suspected MI; and rapid sequence intubation.

W273) Pain prevalence and pain relief in trauma patients in prehospital emergency medical service : **Sivera Berben¹**, **Lisette Schoonhoven¹**, **Tineke Meijis²**, **Pierre M. van Grunsven³**, **Arie B. van Vugt⁴** : 1. Accident and Emergency department, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands. 2. HAN University, Nijmegen, Netherlands. 3. EMS GelderlandZuid, Nijmegen, Netherlands. 4. Twente

Medical Spectrum Hospital , Enschede, Netherlands.

INTRODUCTION: Pain management in prehospital emergency care has significant deficiencies. It is described that failure to acknowledge pain and administer analgesics in the prehospital setting even results in further analgesic delays in the emergency department. However, no adequate figures about prehospital pain in trauma patients could be identified. **Objective:** The study aim is to give insight into the prevalence of pain, the gaps in current treatment, and the effect of current pain treatment in trauma patients in prehospital EMS. **METHODS:** We performed an observational retrospective study of EMS ambulance runs and included all files of adult trauma patients assessed at the scene of an accident in a period of six months from December 2006 until June 2007. We collected data on general patient characteristics, the nature of trauma, suspected injury, pain, and pain treatment by paramedics. **RESULTS:** 1407 patients were included. A report on pain was missing in 28% of the files. In 980 of the remaining patients (n=1014) pain was considered present. The median pain score at arrival on the scene of accident was 6 (IQR=3-8) on a scale from 1 to 10, and 4 (IQR=2-5) at arrival in the ED. Pharmacological pain treatment was given to 42% of the patients in pain, and consisted mostly of Fentanyl administration. Evaluation of treatment was possible in 10% of the patients, the median pain reduction was -3 points (IQR=2-4). **CONCLUSION:** Results confirm the assumption that pain prevalence is high and pain treatment in trauma patients in prehospital EMS requires further systematic improvement.

W274) INTERHOSPITAL TRANSPORT OF CORONARY EVENTS IN ARAGON : José F. Suberviola¹, Antonio Requena¹, Pascuala Garcés¹, Ana M. Segura¹, Rafael Castro¹, José A. Gallego¹ : 1. 061 Aragón, Zaragoza, Zaragoza, Spain.

INTRODUCTION: Early intervention in coronary syndromes has a direct impact on the outcomes. An adequate mobile intensive care units (MICU) infrastructure is required to initiate or continue the specific medical treatments, anyway to support the patient's hemodynamic status. **OBJECTIVE:** To describe the profile of the interhospital transport of coronary events in Aragón. **METHODS:** We designed a retrospective case report study. Patients with coronary events were analyzed from February to July 2007. It included all interhospital transfers carried out by 10 MICU (8 ground and 2 helicopter). Data were collected from transport service records (nursing and medical). We report the coronary events, the hospital levels, transports achieved on weekend or holiday days and time night-time ones. Descriptive statistics were used to analyse the results. **RESULTS:** There were a total amount of 1406 interhospital transports and 426 (30.2%) were coronary events. Most of them were male (75.1%; n: 320) and age ranks: < 35y (3%; n: 13), 35-69y (53.28%; n: 227) and ≥70y (43.66%; n: 186). Acute coronary syndromes represented 78.16% (n: 333), but 211 patients (49.53%) were return transfer to original sending hospitals after coronary angioplasty. Level III hospitals sent 129 patients (31.77%) and Level II hospitals sent 77 patients (18.07%) to next Level hospitals. Attending to labour days, 18.3% (n= 78) were achieved on weekend or holidays. Attending to night-time, 23% (n= 98) were achieved from 9 PM to 9 AM. **CONCLUSIONS:** Coronary events are the most common diseases which require interhospital transport in Aragón. Almost half of these transports are return transfer from coronary angioplasty treatments. Most of the

transports for acute coronary syndromes happened at night-times and non-labour dates. Due to the great geographical dispersion in our region, steps should be taken in order to optimize the use of MICU.

W275) FLYING MOBILE ICU ENVIRONMENT, UNIQUE IN HELLAS : Spiros Papanikolaou¹, Anna Mariola¹, George Perdikogiannis¹, Chara Kotoula¹, Chael Chaidar¹, Pantelia Vergopoulou¹ : 1. . EKAB National Centre for Emergency Care – Division of Aero medical Evacuations, ATHENS, Greece.

INTRODUCTION: Hellas (Greece) is a small country, full of islands. Every year more than 2500 calls requesting aeromedical evacuation, mainly from the islands, are received by EKAB that manages, prioritizes & executes those that are necessary. Some of the calls need aeromedical evacuation at a level of a mobile intensive care unit. The application of intensive care conditions in flight are within the skill of all the medical crew. **METHODS:** We retrospectively analysed all data that EKAB received for 3 consecutive years (2005, 2006, 2007). We focused on cases that were evacuated by air and were intubated & under sedation (indicating that they were treated in intensive care conditions) on mobile respirator, mobile monitor/defibrillator/ECG machine and infusion pumps were used, and in very rare circumstances we managed very sophisticated instruments like intraaortic balloons. During these flights the medevac team performed continuous monitoring of vital signs, ECG, SPO2, EECO2, Airway Pressures, and in certain circumstances special tests like troponin etc. The mean flight time was about 1 hour. The medevac crew needed to be prepared separately & specially every time. **RESULTS:** In 784 transports, the specialty of calling doctor: unknown 15(1,9%); path 55(7%); neonatologist 8(1%); anesthesiologist 56(7,1%); pneum 216(27,6%); neurologist 8(1%); surgeon 200(25,5%); nephrologist 1(0,1%); cardiologist 11(1,4%); Gp 36(4,6%) gynecologist 10(1,3%); orthopedics 138(17,6%); pediatrician 28(3,6%); physician 2(0,3%). Grade of calling doctor: unknown 15(1,9%); Director 59(7,5%); Senior consultant 102(13%); consultant 606(77,3%); Physician 2(0,3%). Of the 784 cases, 258 (32,9%) female, 525 (67%) male, 1 unknown. Patient age: child 70(8,9%), infant 15(1,9%), neonate 114(14,5%), adult 585(74,6%). Cause: pathology 219(27,9%), surgery 356(45,4%), trauma 228(29,1%). **CONCLUSIONS:** Aeromedical evacuations personnel in Greece are capable of performing under challenging conditions. A clear indication of the quality and capability of the medevac teams is the fact that no in flight deaths have occurred in the 3 years period covered.

Mobile ICU flights analysis Fig 1: pts/year

	FREQUENCY	PERCENT
2005	2338	30,9%
2006	2591	34,2%
2007	2642	34,9%
TOTAL	7571	100%

pts/year

	no	%
2005	217	27,7
2006	303	38,6
2007	254	33,7
total	784	100

these are air-evaquated in ICU conditions

W276) Introducing Handheld Ultrasonography to a HEMS Pre-Hospital and Retrieval Medicine Service: Canvassing Physicians' Concerns : Cliff Reid¹, Fergal H. Cummins², Karel Habig³, Kavita Varshney³ : 1. ASNSW Aeromedical Retrieval, Sydney, NSW, Australia. 2. Retrieval, CareFlight, Sydney, NSW, Australia. 3. Westmead Hospital, Sydney, NSW, Australia.

INTRODUCTION: We aim to identify issues for policy development and training prior to implementation of handheld ultrasonography into a Helicopter Emergency Medical Service (HEMS). **METHODS:** A confidential email questionnaire survey sent to all HEMS physicians to quantify prior ultrasonography training and accreditation and to invite comments on the role of ultrasonography in pre-hospital and retrieval medicine. Results were summarised and fed back to the group. **RESULTS** 33 of 53 (62%) physicians responded. 28/33 regularly used ultrasound in their hospital practice, although 18 had not undergone any formal accreditation process. Vascular access was the commonest application which respondents were confident to undertake unsupervised, followed by FAST, abdominal aorta, femoral nerve block, basic echocardiography, and pneumothorax assessment. For interhospital missions, vascular access and haemodynamic assessment were felt to be the most useful applications. For pre-hospital missions, pneumothorax detection was felt to be the most useful. Several respondents expressed concern that pre-hospital FAST may contribute to delays without influencing triage decisions or pre-hospital therapy. Concerns were also expressed regarding quality assurance of ultrasound use and image interpretation. **CONCLUSION:** A confidential survey highlighted educational needs and physician concerns regarding the use of ultrasonography in our HEMS. This provided essential information from which to plan subsequent training and operational policy.

W277) Implementing Handheld Ultrasonography in Pre-Hospital and Retrieval Medicine - From Consultation to Practice : Cliff Reid², Fergal H. Cummins¹, Karel Habig², Kavita Varshney³ : 1. Retrieval, CareFlight, Sydney, NSW, Australia. 2. ASNSW Aeromedical Retrieval, Sydney, NSW, Australia. 3. Westmead Hospital, Sydney, NSW, Australia.

INTRODUCTION: We aim to describe the implementation process for the introduction of handheld ultrasonography into a Helicopter Emergency Medical Service (HEMS). **METHODS:** A four stage process was followed. Stage One - a confidential questionnaire was emailed to all physicians to quantify ultrasonographic experience and any concerns over the use of ultrasonography in HEMS missions. Results were summarised and shared with the physician

team. Stage Two - a dedicated retrieval ultrasound training day to address learning needs and concerns identified in stage one was held, combining didactic lectures with practice on human volunteers and phantoms. Stage Three - A standard operating procedure was introduced defining role and process for retrieval ultrasonography. Stage Four - A dedicated audit proforma was designed to accompany the introduction of the ultrasound devices into operational use. This enabled standard reporting documentation in addition to continual review of standard operating procedure adherence and real time feedback of operator experience. Discussion: Pre- and interhospital ultrasonography use lacks a strong evidence base and therefore continual monitoring is required to ensure appropriateness of application. Concerns by physicians over its use may be addressed both by encouraging ongoing feedback mechanisms and by the provision of structured training. CONCLUSION: Our four stage approach attempted to address physician concerns, training needs, and clinical governance requirements. It may serve as model for the introduction of new technologies or procedures into a critical care service.

W278) Medical Oversight with Wireless Real Time Audio-Visual Transmission Device : Chu Hyun Kim¹, Sang Do Shin² : 1. Department of Emergency Medicine, Incheon Medical Center, Incheon, Korea, South. 2. Department of Emergency Medicine, Seoul National University College of Medicine, Seoul, Korea, South.

INTRODUCTION: Currently, the role of prehospital advanced life support(ALS) performed by Emergency Medical Technician (EMT) has been emphasized. With the medical oversight at the scene using transmission devices, prehospital ALS could be performed under the control. Therefore we evaluate the performance of medical oversight with a portable audio-visual transmission device using high speed Wireless Broad Band Internet (WIBRO) and Window Live messenger. METHODS: On the protective glasses, we attached a small camera and earphone connected to a portable computer which can transport patient's information using WIBRO modem at a transmission speed of 1M bps. After a 1-hour education and demonstration of device, 36 EMTs from 5 local fire stations were allowed to apply the device to trauma patients. From 28, October, 2008 to 17, February, 2009, the device was applied to 55 cases. Then patient's record, ALS record, and medical oversight record were collected. We assessed performance of medical oversight with device and performed a delphi survey of medical usefulness of device from EMTs and EP involved in medical oversight with the device. RESULTS: A total of 55 cases were collected. 46 cases (83.6%) were successful in transmission and achieving medical oversight. Of 46 cases, 34 patients were male (61.8%). The places where the device was applied were outdoors (24%), indoors (20%), ambulance (20%), road (18%), underground (11%), and other(7%). Success rate of transmission was highest in the outdoor setting. Medical oversight with device was performed for patient assessment (46%), treatment (28%), ambulance diversion (7%), and others (19%). Delphi survey revealed that the device will not help them so much despite the performance of the device. CONCLUSION: Medical oversight with wireless real time audio-visual transmission device was performed with a robust transmission. But there was no agreement about the need of that device for the ALS in Korea.

W279) Control of epistaxis by using 2% citric acid : Payman Moharamzadeh¹, Kavous Shahsavari Nia¹, Samad Shams vahdati¹, Natasha Bozorgzadeh¹, Mahboob Pouraghaei¹ : 1. Tabriz university of medical

science, emergency department, Tabriz, Iran.

INTRODUCTION: Epistaxis is one of the most common chief complaints in patients, especially the hypertensive patient, brought to the ED and in some cases requires quick and emergent control. It is essential to control epistaxis in the pre hospital setting, especially in elderly patients with low cardiovascular reserve. The application of natural and easily available materials with lower side effects in the pre hospital setting seems to be valuable. One of these materials is diluted citric acid (domestic lemon juice). **METHODS:** All of the patients with nontraumatic epistaxis who were brought to the ED of Imam Reza Hospital were included in this study. Immediately after ED entrance and rapid physical examination and vital sign checking, 5 drops of 2% citric acid was dripped inside both of the nasal foramen. Then the patients were evaluated regarding bleeding control, vital signs and rebleeding in the next 24 hours. **RESULTS:** In 74% of 80 patients included in this study, epistaxis was controlled without any significant difference in blood pressure and heart rate and no recurrence of bleeding during next 24 hours. **CONCLUSION:** 2% citric acid as an antiseptic and natural and safe agent can be temporarily used for epistaxis control in the pre hospital setting. The major advantage of this substance compared with other vasoconstrictors like epinephrine is the lack of increase in blood pressure and heart rate which in hypertensive patients with epistaxis is a major challenge for emergency physicians.

W280) Illegal immigration and health in rural area : Jose Minguéz¹, Javier Millan², Pedro Garcia¹, Rafael Caballero¹, Maria del Mar Lopez³, Natalia Davila³ : 1. Hospital de la Ribera, Alzira, Valencia, Spain. 2. Hospital Lluís Alcanyis, Xativa, Valencia, Spain. 3. Departamento de Salud de la Ribera, Alzira, Valencia, Spain.

INTRODUCTION: Illegal immigrants in the majority of EU member states, receive basic medical care. In some countries it recognizes a medical coverage similar to that of other citizens. **Purpose:** To determine the demographic and clinical profile of the illegal immigrant population making use of non-hospital health department emergency facilities. **METHODS:** A descriptive study was performed by reviewing 405 clinical histories. The inclusion criteria were illegal immigrants. **RESULTS:** A total of 384 patients came in for their first consultation; 25% of them required a second visit. The distribution by age was 9,11% in patients below the age of 15; 82,81% in patients between the ages of 15 and 50 years and 8,07% in patients over the age of 50. Among all the patients, 31% of them under the age of 15, 24% of those aged between 15 and 50 years old and 22% of the patients older than 50 returned to the emergency department. The distribution of this population origin was: 50,69% from Eastern Europe; 21% from Africa and 17,5% from Central and South America. The most frequent general pathology was medical (55,52%), followed by trauma (27,91%) and the gynaecological (9,20%) diseases. The most common pathology was respiratory (19,88%), followed by digestive (17,67%), urologic (5,39%) and cardiac (4,41%) diseases. **CONCLUSIONS:** The illegal immigrant population attending the emergency department was an adult-young population with mild pathologies (the most common: the respiratory and the digestive diseases). The majority of the patients were from Eastern Europe. A high percentage comes for a second visit throughout the year; it is thus shown that it is a population established in the area. This requires adapting the

healthcare system to this new situation improving the registration and follow-up processes for these patients.

W281) Incidence and medical treatment of life-threatening arrhythmias in a Belgian EMS system : Leen Goossens¹, Philippe Heerinckx¹, Jean Bernard Gillet¹, Marc B. Sabbe¹ : 1. University Hospitals Leuven, Leuven, Belgium.

INTRODUCTION: In the Belgian EMS system, EPs are member of a Medical Urgency Group (MUG) and treat patients already in the prehospital setting. Life-threatening arrhythmias are considered to be good indications for a MUG intervention. This retrospective study was set up to evaluate the incidence and prehospital therapy of life-threatening arrhythmias. **METHODS:** All MUG records for a period of 18 months (Jan 2007 until July 2008) of the MUG team of the University Hospitals of Leuven (Belgium) were retrospectively examined. Symptomatic bradycardia and tachycardia, third degree sinoatrial block were selected as inclusion criteria. PEA, asystole and VF were exclusion criteria. **RESULTS:** In the study period 2210 MUG interventions were performed. Only 55 (2.5%) fulfilled the inclusion criteria. The records of twenty patients were incomplete and not used for further analyses. Symptomatic bradycardia (n = 13), third degree sinoatrial block (n = 5), symptomatic small QRS tachycardia (n = 10), symptomatic broad QRS tachycardia (n = 7) were observed. After medical treatment prehospitally 7 out of 13 patients with bradycardia, 4 out of 5 patients with third degree sinoatrial block, 10 out of 10 patients with small QRS tachycardia and 7 out of 7 patients with broad QRS tachycardia regained an acceptable rhythm and clinical improvement. None of the patients with a third degree sinoatrial block responded to atropine. **CONCLUSION:** The incidence of life-threatening arrhythmias are relatively rare. However, early prehospital medical intervention improved the electrical activity of the heart and the clinical status of the patient. With this study, we cannot demonstrate the effect on outcome.

W282) The value of a carbon monoxide detector in the pre-hospital setting : Luc J. Mortelmans¹, Sam Van Boxstael¹ : 1. Emergency Medicine, AZ KLINA, Brasschaat, Belgium.

BACKGROUND: The use of smoke and carbon monoxide (CO) detectors in Belgian houses is not obligatory. Ambulances however, in contrast to pre-hospital medical teams, are supposed to carry a CO detector on every intervention. **CASE:** The value was proven when our ambulance and medical team was sent to a 30-years-old woman who was said to overreact on a tranquillizer she had taken. Approaching her fourth floor apartment the ambulance's CO detector alarmed us to a possible risk with a full alarm in the flat itself. The patient was stuporous and there was no apparent source of carbon monoxide production. The patient was evacuated to her terrace and given normobaric oxygen. The fire department was activated and measurement revealed an elevated CO concentration in all flats on the four floors of the building, the highest on top. 10 inhabitants were evacuated and given normobaric oxygen before clinical control in the hospital. The index patient and her partner who found her, were treated with hyperbaric oxygen (COHb of 15 and 13.8% respectively at the start of tanking), the others were ambulatory and treated with normobaric therapy. All had a full recovery. Further research revealed that a boiler on the ground floor was the source of the problem. The

combustion gasses were evacuated to a vertical cylinder situated in the elevator shaft. There was a serious leakage to the shaft between the third and fourth floor penetrating the flats. DISCUSSION: As there was no history or suspicion of CO exposure the diagnosis in this case would certainly be seriously delayed, not only endangering the patient but also the EMS personnel working at her side and the co-inhabitants of the building who would not be warned. This case convinced us of the value of mobile CO detectors for all pre-hospital teams, not only in the diagnostic setting but also for their own safety. Our pre-hospital medical team has been provided with one since then.

W283) Use of Medical Simulation to Satisfy National Registry Paramedic Student Endotracheal Intubation Training Requirement Elements : Leo Kobayashi¹, Edward Jernigan², Selim Suner³, Scott Marcotte¹, Mark S. Jones¹ : 1. Rhode Island Hospital Medical Simulation Center (RIHMSC), Providence, RI, USA. 2. East Bay Medical Educators, Bristol, RI, USA. 3. Department of Emergency Medicine, Alpert Medical School at Brown University, Providence, RI, USA.

INTRODUCTION: Paramedic students acquire endotracheal intubation (ETI) skills through a combination of didactics, skills stations, actual procedural performance on live animals or humans and “field” intubations. Various issues pose challenges to successful preparation of paramedic students for regional and national licensing qualification. Authors present a simulation-based methodology used to overcome logistic issues in one pre-hospital program. METHODS: A regional paramedic course identified 5 students who completed their didactic and skill stations but were unable to be placed in clinical settings for their “live intubation” requirements. A proposal to use advanced medical simulation (SIM) in a rigorous manner to achieve “live intubation equivalents” was negotiated by program directors and approved by state Emergency Medical Services officials. Eight adult and two pediatric patient presentations commonly encountered in pre-hospital settings and requiring ETI were generated (see Table). With assistance from simulation personnel, evaluations were conducted by lead instructor or medical control physician on the standard National Registry Emergency Medical Technician-Paramedic (NREMT-P) ETI checklist (see Figure) so as to maintain a 1:1:1 ratio of student, simulation expert and examiner. RESULTS: 5 paramedic students satisfying all didactic and skill-lab requirements completed the evaluation program. All students successfully completed each of scenarios and met their licensing qualification requirements for the state upon completion of the program. CONCLUSION: SIM techniques and technologies are widespread in the educational realm and expected to progress towards high-stakes assessments. Collaborative efforts to employ simulation to overcome challenges in meeting certification requirements represents a potential advancement in emergency medical provider training and assessment.

Case	Brief description	RR	SpO2	HR	BP	temp
Adult case 1	Charles: 20 year old, assault	8-12	94%	45	187/131	97.9
SimMan 1	w/lo closed head injuries	deep				
Adult case 2	David: 18 year old, peanut	32	89%	135	88/32	98.9
SimMan 1	anaphylaxis					
Adult case 3	Ethel: 65 year old female,	35	81%	140	210/145	98.6
SimMan 2	CHF / severe pulm. edema					
Adult case 4	Pat: 18 year old female, fall	4	90%	85	170/108	99.8
SimMan 2	at home, ecchym.					
Adult case 5	Alice: 65 year old female,	(0)	(75%)	(110)	(91/49)	(98.7)
SimMan 6	witnessed cardiac arrest					
Adult case 6	Barbara: 68 year old female,	(3)	(90%)	(120)	(55/48)	(97.2)
SimMan 5	known GI bleed unresponsive					
Adult case 7	Isaac: 1 year old, post	2	82%	40	41/28	100.8
SimBaby	seizure, respiratory distress					
Adult case 7	John: 1 year old, post	45	85%	130	75/53	101.5
SimBaby	bronchiolitis, resp. distress					
Adult case 7	George: 25 year old male,	34	76%	110	140/75	100.1
SimMan P	H7N1, PCP pneumonia					
Adult case 8	Harry: 55 year old male,	0	81%	50	75/32	95.3
SimMan P	witnessed methadone OD					

W284) CONTINUOUS EDUCATION OF STAFF AT THE EMERGENCY MEDICAL HELP MARIBOR : Aleksander Jus¹ : 1. Center for emergency medicine Maribor, Zdravstveni dom Maribor, Maribor, Slovenia.

INTRODUCTION: The specificity of the treatment and care of patients in the emergency department require the health care team to implement high quality care and professionalism in carrying out the work from beginning to end of transmission. For such treatment the patient will require professionally educated and trained personnel who are continuously educated to thus raise the level of their knowledge, skills and ability. The aim of our research was to determine the need and motivation for continuous education of the employed staff.

METHODS: Empirical data was collected based on a questionnaire, which was administered to members of the health team of the Center for Emergency Medical Help Maribor. The survey was conducted between December 2008 and January 2009. The survey questionnaire was composed of 14 closed-type questions, which covered the age, seniority, education, satisfaction with the work, motivation for education and educational opportunities. The respondents were female and male, different age, working life and education. Analysis used the descriptive methods and quantitative techniques.

RESULTS: 70 had been distributed questionnaires. The research showed that the majority of staff respondents (88 %) expressed the need for continued education and had a high motivation to upgrade their knowledge, skills and abilities. **Discussion:** The results show an awareness of employees to continuous training, which is one of the cornerstones of modern emergency medicine, in which increasingly includes a process of health care. **CONCLUSIONS:** Through continuous education, which should include both theoretical positions, as well as practical skills, to increase the quality of implementation and operation of health institutions, which can be improved only with continuous and oriented to the goals of education for all employees.

W285) Development of an Emergency Medical Services and Trauma System in Sri Lanka: An Experiential Report : Ross E. Bryan¹, Amy L. Marr¹, Donnie Woodyard², Mohammad Daya¹ : 1. Oregon Health and Science University, Portland, OR, USA. 2. Medical Teams International, Portland, OR, USA.

INTRODUCTION: Trauma is now a leading cause of morbidity and mortality in many developing countries. In 2005 Sri Lanka experienced a total of 550,108 hospital admissions due to trauma resulting in an incidence rate of 2,797 per 100,000 population, and a hospitalization rate of 15%. The majority of these patients were between their second and fourth decade of life, resulting in a staggering loss of productivity. In response, the country began to develop a national Emergency Medical Service (EMS) and trauma system.

METHODS: Based on the recommendations made by the WHO and experiences of other developing nations, a plan for developing a system was devised and implemented. This included creation of a universal access number and a standardized emergency medical technician curriculum. EMS personnel were trained and ambulances purchased and outfitted. Trauma centers were designated and protocols developed to ensure patients arrived at

appropriate locations. **RESULTS:** The program was initiated with a pilot project in Hikkaduwa. Over the next 2 years the system was expanded to include the major population centers of Colombo, Galle, Jaffna, and Kandy (total population 3.5 million). Paramedics have responded to over 1,000 calls with an average response time of under 10 minutes for the large population centers. Patients are receiving prehospital care and arriving at appropriate hospitals in time to receive definitive treatment. **CONCLUSIONS:** Implementation of an EMS/trauma Systems can be achieved in developing countries with limited resources. Further study is required to determine the impact of this program in reducing trauma morbidity and mortality.

W286) Accuracy of Prehospital Estimated Time of Arrival : Michael E. Silverman¹, Brian Walsh¹, Tammi H. Schaeffer² : 1. Morristown Memorial Hospital, Morristown, NJ, USA. 2. Denver General, Dever, CO, USA.

INTRODUCTION: Despite the routine use of mobile intensive care units (MICUs) and the presumed importance of early treatment on patient outcomes, there is very little research that evaluates the accuracy of prehospital estimated times of arrival (ETA). **OBJECTIVES:** Our goal was to quantify the differences between estimated prehospital ETA and actual time of arrival (ATA). In addition, we wanted to determine if larger differences were related to the day of the week, time of the day (as measured shift), or the weather. **METHODS:** Setting: A NJ suburban teaching hospital with 70,000 annual emergency department visits. Protocol: A convenience sample of 62 MICU transports was used to gather data pertaining to ETA. At the time on-line medical control was given, the treating physician would request an ETA from prehospital personnel and record the day of the week, the shift, and the weather conditions. The estimated time was compared with the ATA as calculated from the time the ETA was given until the time the MICU arrived in the ED. Prehospital personnel were blinded to the study and IRB approval was granted. **RESULTS:** 41 transports (66%) arrived later than expected. The average ETA for early arrivals was 12.5 +/- 3.8 minutes. Early arrivals presented 2.3 +/- 1.3 minutes prior to the ETA, representing a difference of 24%. The average ETA for late arrivals was 11.5 +/- 4.8 minutes. Late arrival presented 4.9 +/- 3.3 minutes after the ETA, representing a difference of 29%. These differences were not statistically significant. In our sample, there were no significant differences related to day of the week, time of the day, or weather conditions. **CONCLUSIONS:** The prehospital personnel at our hospital tend to be accurate when estimating time of arrival. The differences between ETA and ATA are probably not clinically significant, but further studies that evaluate patient outcomes are needed.

W287) Effects of initiation of anticoagulants in chest pain disease : Mohammad davood Sharifi¹, Mohamad Kalantari meibodi¹, Naser Mohamadkarimi¹, Shahram Keykhah¹ : 1. emergency, sbmu, Tehran, tehran, Iran.

INTRODUCTION: Considering the high rate of cardiovascular disease in Iran, a quick diagnosis and the prescription of drugs and dosages in our country should be adopted to climatic and racial conditions prevalent. A study is needed to determine whether methods suggested are also suitable for our country. The practice under study here is an early administration of Plavix to patients with heart conditions in emergency wards. **METHODS:** We

chose two Tehran super specialty hospitals which receive a great number of cardiovascular patients (Baghiatullah and Imam Hossein Hospitals). Early doses of Plavix were administered to patients with cardiovascular conditions. In 50 patients in Baghiatullah Hospital the initial dose was chosen at 75 milligrams while in 50 patients in Imam Hossein Hospital it was decided to set the initial dose at 300 milligrams and it was decided to use the domestic product at both hospital. Patients given the initial dose were given a constant daily dose equal to the initial dose during their stay in the hospital. The number of days of hospitalization and side effects were monitored until their discharge from the hospitals. RESULTS: Patients suffering from acute coronary condition, that were taken to Baghiatullah Hospital and given a dose of 75 milligrams, were hospitalized for 48 to 72 hours and then discharged while patients of a similar condition who were not given the shot were usually hospitalized for 96 hours before being discharged. Patients with acute coronary conditions who reported to Imam Hossein Hospital were given an initial dose of 300 milligrams. It was later demonstrated that this dosage had no significant effect on the duration of hospitalization, which for patients formerly hospitalized, was around 48 hours. CONCLUSION: It could be concluded that in our country, administering an early low dose of Plavix (at emergency ward stage) is preferable to a later administration and it is also preferable to the administration of high doses.

W288) Correlation between diseases and socioeconomic state in urban populations : Mohamad Kalantari meibodi¹, Afshin Amini¹, Hamid Kariman¹, Ali Arhami dolatabadi¹ : 1. emergency, medicin mashad, Mashad, tehran, Iran.

INTRODUCTION: Urban society hosts many cultural, economical and social differences which may be a contributor to specific diseases. The process of decision-making necessitates gathering and organizing information from each area. METHODS: At the beginning, four emergency teams each consisting of two trained technicians and each equipped with one vehicle were used. Two of the teams were deployed to southeastern Tehran while the other two were deployed to the northeast. These teams were commissioned to transfer patients to the nearest hospital after receiving emergency calls. After dividing patients into categories of cardiovascular, bronchitis, non-drug abuse suicidal, poisoning and accidents the following results were observed. RESULTS: Car accidents were the most frequent causes of emergency calls both in southern and in northern areas of Tehran. The number of accidents and the related frequency of death and injury were greater for northern Tehran. In most cases, men were more involved in accidents. The only cause of emergency calls for which women were more the actuators was suicide. In both northern and southern areas, car accident and poisoning happened mostly to those between 18 and 27. In northern areas of Tehran, addictive drug abuse was more frequent in men while non-addictive drug abuse was more frequent in women. In southern areas of Tehran, most incidents of poisoning and drug abuse in both sexes were of addictive type. In both northern and southern areas, the highest rates of poisoning and accidents belonged to 18-27 age groups and the most frequent cause of emergency calls related to 48-57 age groups was heart condition. The rarest cause of emergency calls for both southern and northern areas was manslaughter, though the absolute number of this was greater for southern areas and the age group involved mostly was 18-27 age groups.

W291) Hepatocellular Carcinoma Rupture: A Catastrophic Complication in the Emergency Department :

**Costantino Caroselli¹, Giorgio Ricci¹, Francesco Praticò¹, Paola Perfetti¹, Giampaolo Rocca¹ : 1.
Dipartimento di Emergenza e Accettazione, Ospedale Civile Maggiore, Verona, Italy.**

BACKGROUND: Hepatocellular carcinoma (HCC) is a primary malignancy of the liver. We describe a clinical case of hepatocellular carcinoma (HCC) spontaneous rupture successfully controlled by emergency selective trans-catheter intra-arterial embolization (TAE). **CASE:** A 92-year-old female presented to our Emergency Department with a history of nausea, fatigue, sudden-onset epigastric pain and extreme discomfort. One hour before she had a syncopal event and vomiting episodes. Five years before she experienced a gastric haemorrhage. On admission her blood pressure was 70/40 mmHg with a heart rate of 120 beats/minute. Non-invasive oxygen saturation (SpO₂) was 85% while she was breathing room air. Lung fields were clear on auscultation, abdomen was soft but with painful and tender hepatomegaly, no pulsating masses or souffles were detectable. A rectal examination revealed no blood. Peripheral pulses were normal and symmetrical. She was urgently administered colloids, saline fluids and dopamine intravenously and as soon as possible a blood transfusion. Laboratory findings revealed anaemia but oesophagogastroscopy was normal. Abdominal computed tomography (CT)-axial scan showed, in the caudal segments of the right liver lobe, a 6-cm tumour burden bleeding with spontaneous rupture and a massive hemoperitoneum (Panel A and B). She underwent immediate TAE performed by intra-arterially injection that successfully controlled the life-threatening bleeding. Later hepatic resection was necessary for cure.

DISCUSSION: The occurrence of spontaneous rupture of HCC is a serious complication of this tumour. In our patient, at the onset of symptoms, and with her past history suggested a gastric ulcer but an oesophagogastroscopy excluded it. Abdominal CT-axial scan pointed out a large tumour bleeding into the peritoneum.

Emergency TAE is the most effective and least invasive treatment for hemostasis. Although embolization is a common practise in these patients, the prognosis is still poor, due to profuse bleeding. These findings suggest that prompt diagnosis of spontaneous rupture of HCC is required to realize life-saving measures.

Pos. paziente: HFS
Desc. studio: Abdomen Angio a 1mm
Desc. serie: Angio 1mm 4.0 B30f
< 5 - 47 (TUTTO) >

120kV, 150mAs
LF 4.00 mm
283% Pixel



Con perdita 11.4

P

C 104
W 350



W292) Lactate and Sepsis : Muhammad A. Majeed¹, Mathew Cooke¹ : 1. russells hall, Dudley, United Kingdom.

INTRODUCTION: Lactic acidosis is defined as the presence of lactate concentration $>5\text{mmol/L}$ with metabolic acidemia $\text{pH} < 7.35$. Lactic acid is the product of anaerobic metabolism (glycolysis) and leads to an increased anion gap metabolic acidosis. Lactate is produced when there is hypoxia at the tissue level. Lactate levels are a part of most of the sepsis scoring criteria used in the emergency departments as it is a sensitive marker. We have seen people using it as an exclusion criteria in suspected septic patients but with the rest of the parameters normal. **Objectives:** 1. Is lactate level dependent upon the duration of sepsis? 2. Can we use it as an exclusion criteria? **METHODS:** We collected a list of patients admitted to the A&E department with severe sepsis according to the sepsis criteria. There were 48 patients over a period of 2 months. All adult patients with severe sepsis were entered in the study. **RESULTS:** Among 48 patients only 6 patients (12.5%) had a lactate of more than 6. The rest of the patients had a lactate within normal range of < 2 . **CONCLUSION:** Lactate was significantly raised in only a few (12.5%) cases. This doesn't mean the patients were not septic, as the rest of the criteria suggested, but we need to repeat the lactate levels later as it could be just the early stages of sepsis where tissue hypoxia hadn't developed yet. According to the textbooks, during sepsis there is poor tissue perfusion which then leads to anaerobic glycolysis and lactic acidosis. Therefore the lactate levels depend on the stage of sepsis. Therefore to put it in the early sepsis criteria is debatable. We can use the early lactate levels as a baseline value in the sepsis patient to see the trends which change with the time. **Limitations:** This is a small study and we did not check to see whether these patients had rising lactate levels later. We don't know for how long the patient was septic for before coming to the hospital. Therefore it needs to be studied at a higher level with more patients and further looking forward for lactate later as well.

W293) Use of Recombinant Activated Factor VII for Intractable Bleeding in Patients without Hemophilia: a Developing Country Tertiary Care Center's Experience : George S. Abi Saad¹, Khaled Musallem¹ : 1. Surgery/ Trauma&Critical Care Surgery, AUBMC, Beirut, Lebanon.

INTRODUCTION: Although the use of recombinant activated factor VII (rFVIIa) to control intractable bleeding in non-hemophiliac patients is expanding, several issues pertinent to its potential thrombotic complications and effect on patient mortality are still of concern. **METHODS:** We herein describe our experience at a developing country tertiary care center over the period of four years. **RESULTS:** A total of 49 patients were identified of whom 28.6% belong to the pediatric age group. The most common bleeding settings were intracerebral hemorrhage, abdominal aortic surgery, general surgery, and disseminated intravascular coagulopathy. All patients achieved cessation or significant reduction of bleeding. Only one patient had a documented post use thrombotic complication. Out of the whole group, 12 patients (24.4%) eventually died with only one death having a possible association to rFVIIa use. There was a statistically significant reduction in the need for blood product transfusion after the use of rFVIIa. The use of rFVIIa was in accordance with the hospital's algorithm (identifying salvageable patients, preconditioning, blood product replacement, and dosing) in 30 (61.2%) patients. **CONCLUSIONS:** We conclude that rFVIIa should continue to be considered in non-hemophiliac patients failing to respond to conventional measures of bleeding control. However, this off-label use should be coupled with strict adherence to the treatment

algorithms which remains essential in developing countries with limited health care resources.

W295) How a case of urosepsis with non-traumatic urinary tract rupture can be confused with sciatica : Martino Pengo¹, Roberta Volpin², Lorenzo Calò¹, Franco Tosato² : 1. Università degli studi di Padova - Policlinico Universitario - Clinica Medica IV, Padova, Italy. 2. Azienda ospedaliera di Padova - Dipartimento di Emergenza ed Accettazione, Padova, Italy.

BACKGROUND: Septic shock often complicates urinary tract rupture and is a burden with a high mortality rate. But this rarely represents a diagnostic challenge for emergency physicians because signs, symptoms and laboratory tests are suggestive. **CASE:** This is a case of a 70 years old patient admitted to the emergency ward because of right leg and lumbar pain. Urine test was normal, no signs of inflammation at routine laboratory tests, clinical evaluation suggested sciatica and the diagnosis was confirmed by orthopedic evaluation. Before the patient was discharged she became pyretic (39° C), so she was hospitalized on the internal medicine clinic. The patient rapidly developed septic shock and hypotension with signs of peripheral hypoperfusion which required immediate hemodynamic support. Radiographic imaging revealed ureteral spontaneous rupture and intraperitoneal urinoma formation. Ureteral urine leakage was managed successfully by drainage through percutaneous catheter and double-J ureteral stenting with amelioration of vital parameters and renal function. Blood culture was positive for *Escherichia coli* so antibiotic therapy was established, because of strong hemodynamic instability patient was also treated with drotrecogin. Radiographic follow-up showed good renal function with correct ureteral stenting placement. The patient was discharged after one month from admission in ER. **DISCUSSION:** This case underlines the importance of early recognizing a rapid-evolving septic shock even the presentation of the case is uncommon. Following guidelines always helps emergency physicians even in though cases, especially if the clinical pattern is changing.

laboratory test after 10 hours from admission

WBC (x10.9/L)	8,48
CRP (mg/L)	4,01
INR	1,80
D-dimer (ug/L)	8000
AT III (%)	64
Fibrinogen (g/L)	2,40
Serum creatinin (umol/L)	158

ARSLAN,ANTONIA

A

Osp. di Padova
Definition

ID: 09.04.13-23:02:46-DST-1.3.12.2.1107.5.1.4.60191

* 30/04/1938

Study 1

13/04/2009

23.24.13

24 IMA



W296) IMPLEMENTATION AND ASSESSMENT OF A CLINICAL PATHWAY FOR SEVERE SEPSIS IN THE EMERGENCY SETTING : Purificacion Camacho¹, Maria Teresa Osano¹, Nuria Hernandez¹, Isabel Miro¹, Almudena Cercos¹, Xavier Canari¹, Josefa Caus¹, Isabel Campodarve¹ : 1. Hospital del Mar-IMAS, Barcelona, Spain.

INTRODUCTION: The increase in the incidence of severe sepsis has been associated with an increase in mortality. It has been shown that early diagnosis and implementation of adequate therapeutic measures improve survival. A multidisciplinary team of our hospital has developed a clinical pathway to be used in the emergency setting aimed at reducing sepsis-related mortality. **OBJECTIVE:** The objective of this study was to assess adherence with the pathway for severe sepsis, the goals of which are: mean arterial pressure (MAP) ≥ 65 mm Hg, diuresis ≥ 0.5 mL/kg/h, central venous pressure (CVP) 8–12 mm Hg, arterial oxygen saturation (SaO₂)

?93%, central venous oxygen saturation (ScvO₂) ?70%, visual analog scale (VAS) <3.

METHODS:

A descriptive study of all patients with severe sepsis included in the clinical pathway over a 15-month period from January 2008 to March 2009 was carried out. RESULTS: A total of 120 patients (mean age 65.6 +/- 18 years) was studied. Main initial measures included two peripheral vein accesses in 74.2% of patients and one central venous access in 59.2%. Blood cultures within the first 2 hours of the patient's consultation study were performed in 90.4% of cases. Blood cultures were performed before the use of antibiotics in 77.5% of cases.

Administration of antibiotics within the first 2 hours was fulfilled in 92.5% of patients. VAS was assessed in 54.2% of patients; 50% of patients had VAS <3. MAP ?65 mm Hg was recorded in 90.8% of cases, ScvO₂ ? 70% in 12.5%, CVP 8–12 mm Hg in 88%, and diuresis ?0.5 mL/kg/h in 70.9% of cases. Adherence to the clinical pathway was satisfactory in 53.3% of cases. Achievement of these objectives resulted in a mortality rate of 15.8%.

CONCLUSIONS: The use of a clinical pathway for severe sepsis in our emergency service has been satisfactory; fulfillment of objectives was associated with a low mortality.

W297) Review of first dose of antibiotic and mortality rates in severe sepsis in patients admitted in the emergency department of a referral hospital : Manuel Salido¹, Alfonso Hidalgo Natera¹, Raimundo Seara Valero¹ : 1. Emergency Department, Hospital Carlos Haya, Malaga, Malaga, Spain.

INTRODUCTION: Sepsis is a major challenge in critical care medicine. The high prevalence of acute infectious disease in emergency department (ED) is well known. In our hospital, fever is the main consult reason in 5-10% of patients and 10% of them develop severe sepsis or septic shock. Severe sepsis and septic shock mortality seems to be related to the first hour of management. Optimal fluid replacement, vasoactive drugs and the appropriate and rationale antibiotic use in initial resuscitation are the best way to improve the outcomes. We tried to relate the moment of the first intravenous antibiotics (iv ATB) administration with mortality in the following twenty-eight days in those patients with sepsis. METHODS: We performed a descriptive study of the antibiotic use in initial management in patients admitted in our ED since May of 2007 to May of 2009. We described the source of infection and its frequency and the initial therapeutic measures, according to our management protocol based on the surviving sepsis campaign. We studied the delay time in iv ATB administration from the patient arrival to the emergency room. RESULTS: 61 patients with clinical diagnosis of severe sepsis or septic shock were included. We excluded patients with terminal illness and those who had a "no resuscitate order". The patients who received antibiotic treatment were categorized into three groups: administration delay less than an hour, less than 3 hours, or more than three hours. For the statistical analysis we used chi square test. 30 patients died in the first 28 days after admission. Only 2 of them had received iv ATB in the first hour. 31 survived, and 21 of them had received iv ATB in the first three hours. CONCLUSION: Empiric iv ATB therapy should be started as soon as possible after recognition of the first sepsis-induced organ dysfunction. We have not enough evidence to conclude that the high mortality ratio is only related to delay of first dose of intravenous antibiotics. But we found that most deaths occurred in patients who received antibiotics with a delay of more than three hours.

Twenty eight days survival

	NO	YES
	30	31
ATB administration in the first hour	6	6
ATB administration in first three hours	10	19
ATB administration in more than three hours	9	2
No ATB	5	4

W299) CASE REPORT: SPONTANEOUS CHOLECYSTIC HEMORRHAGE : Germana Ruggiano¹, Renzo Camajori Tedeschini¹, Alessandro Rosselli¹ : 1. Emergency medicine, Ospedale S. Maria Annunziata, Florence, Italy.

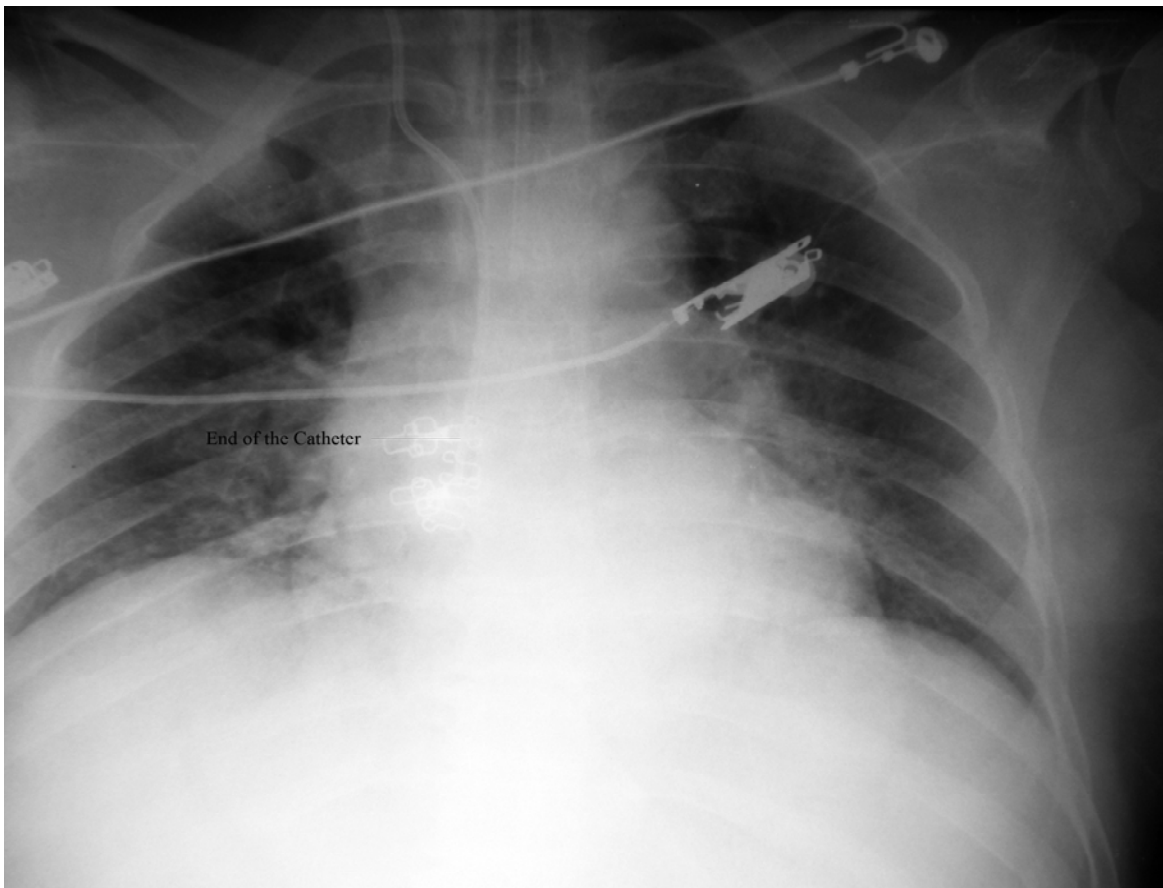
BACKGROUND: Spontaneous haematomas, are not rare in patients on anticoagulant therapy both retroperitoneal and intraperitoneal secondary to minimal trauma or to microangiopathy. Many studies in the literature report on the association between LMWHs and haematomas, and there is also a case report describing a spontaneous retroperitoneal haematoma during fondaparinux treatment. Spontaneous abdominal haematoma during antiplatelet therapy has rarely been reported. Clopidogrel has been introduced as an antiplatelet drug in combination with aspirin to decrease thrombotic events in patients with cerebrovascular and coronary artery disease. The association between clopidogrel and aspirin plus fondaparinux puts patients at a greater risk of bleeding and the benefit of this association should always be weighted against the risk of bleeding. **CASE:** We describe the case of a 76 year old patient that presented to our Emergency Department with abdominal pain and hypotension. He had a recent history of hospital admission and his chronic therapy was: Clopidogrel, Furosemide, Corticosteroids, Aspirin, Fondaparinux, Ipratropium, Lansoprazole. His vital parameters were: FC 80/min; PA 85/40 mmHg, SaO₂ 98%. The abdomen was tender in the epigastric region; Blumberg sign was negative. The laboratory tests showed Hb 8,2 g/dl and the FAST ultrasound examination showed fluid in Morrison's pouch, the splenorenal pouch and among the intestinal loops. We immediately started therapy with colloids (1500 ml) and proton pump inhibitors obtaining temporary hemodynamic stabilization. The abdomen contrast-enhanced CT scan confirmed a serohematic fluid collection in the perihepatic, perisplenic and Douglas pouch. After contrast enhancement the cholecystic fluid collection received the contrast medium from the hepatic artery branches. The patient underwent emergency surgical intervention with removal of the gallbladder that appeared full of blood and had broken into the peritoneal cavity; 4000 ml of blood were removed from the abdomen.

W300) Aortic Placement of Central Venous Catheter: An Unintentional Complication : Firat Bektas¹, Secgin Soyuncu¹, Ilker Gunduz¹ : 1. emergency medicine, akdeniz university, Antalya, Turkey.

CASE: A 57 years old woman presented to emergency department with altered mental status and abdominal distention. The vital signs were blood pressure 73/41, pulse 110, respirations 28, axillary temperature 38.7°C and oxygen saturation of 61% on room air. The patient was intubated and a right internal jugular venous (IJV) catheter was placed without hematoma for

management of fluid resuscitation, before she was going to the operating room. Catheterization was performed by real time ultrasound visualization. While central venous pressure was being measured, blood moved into the manometer. This finding led us to think that the catheter was placed in to the common carotid artery unintentionally. Blood sample was obtained from the catheter for performing blood gas analysis (partial oxygen pressure was 89 mm-Hg) and chest X-Ray was ordered to show catheter placement to perform final diagnosis (Figure).

DISCUSSION: Puncture of the carotid artery during IJV catheterizations attempts averages 6% in the current literature, up to 40% of carotid punctures are associated with a hematoma. If a patient is hypotensive as in the present case, catheters can be unintentionally placed in the carotid artery and additional hematoma may not be seen.



W301) Transfusion of Group O+ Unmatched Packed Red Blood Cell in Hemorrhagic Shock Patients: A One-year Retrospective Experience : Ji-hwan Lee¹, Minhong Choa¹, Junho Cho¹, Sung-Phil Chung¹ : 1. Yonsei university, Seoul, Korea, South.

INTRODUCTION: It is important to begin a transfusion as soon as possible, safely and

appropriately in a hemorrhagic shock patient. Group O+ unmatched pack red blood cell (universal O+) transfusion may meet these purposes. We reviewed our experiences with universal O+ to analyze the usefulness of it in the emergency department (ED) hemorrhagic shock patient compared with matched pack red blood cell transfusion. **METHODS:** This is a retrospective study. Patients who had systolic blood pressure less than 90 mmHg or pulse rate more than 120 beats per minute in the ED were included. The medical records of them were reviewed. The collected data were demographic data, vital signs, blood test results, time to transfusion, the amount of transfusion, complications, and diagnoses. We calculated the emergency transfusion score (ETS) based on the patient's medical records. **RESULTS:** One hundred five patients were included. 13 (8 trauma and 5 non-trauma patients) out of 105 were transfused with a universal O+. These patients had less time to transfusion compared with cross matched transfusion groups (21 ± 13 versus 160 ± 157 minutes, $p<0.001$). There were no differences in complication ratio between groups ($p=0.334$). All ETSs of patients transfused universal O+ were more than 3, which meant that universal O+ transfusion would be appropriate. **CONCLUSION:** The universal O+ transfusion would be a useful treatment on an ED hemorrhagic shock patient compared with matched pack red blood cell transfusion due to the less time to transfusion without increasing complications.

W302) Hemoperitoneum due to spontaneous rupture of liver and epiploic vessels in a patient with cirrhosis : Beres Zsolt-Levente¹, Borcea Hadrian Liviu¹, Botea Mihai² : 1. Emergency Department, Bihor County Emergency Hospital, Oradea, Bihor, Romania. 2. University of Oradea, Faculty of Medicine and Pharmacology, Oradea, Bihor, Romania.

BACKGROUND: Atraumatic spontaneous rupture of the liver is an uncommon but important clinical entity associated with a high morbidity and mortality. **CASE:** We describe a case of spontaneous liver and epiploic vessels rupture in a patient previously diagnosed with C virus chronic hepatopathy after driving a car and being restrained with the seat belts for several hours. At presentation she had superior abdominal pain with generalized tenderness and shock. The patients' general status worsened gradually so emergent surgery was needed; she died in the operating room from hemorrhagic shock. **DISCUSSION:** The reported case and the literature review suggest that spontaneous rupture of the liver must be considered in the differential diagnosis of acute hemoperitoneum. A high level of suspicion and early diagnosis with imaging are critically important.

W303) Mortality and disposition of sepsis patients in the emergency department : Alice S. Vis¹, Alex Glasbergen¹, Rianne de Jong¹, Ernie de Deckere¹, Bas de Groot² : 1. MCHaaglanden, The Hague, Netherlands. 2. Leiden University Medical Centre, Leiden, Netherlands.

INTRODUCTION: The Surviving Sepsis Campaign (SSC) is an international initiative with the aim to reduce mortality of patients with severe sepsis. Most effectiveness research focuses on patients admitted to the ICU. The objective of this study in a Dutch emergency department (ED) is to assess how many goals of the SSC resuscitation bundle are attained and what the

mortality and disposition of these patients is. **METHODS:** Of patients meeting the criteria for severe sepsis/septic shock we assessed triage category, disposition, Mortality Prediction Model score (MPM-0, as an illness severity score), number of organs failing and mortality. We determined how many goals of the resuscitation bundle were attained, including lactate measurement <6 hours, blood cultures taken before antibiotics were given within 3 hours, and mean arterial pressure >65 mmHg <6 hours after diagnosis of severe sepsis. **RESULTS:** All patients were triaged as urgent. 80% were admitted to the ward. Mortality was 16% in patients admitted to the ward, and 41% admitted to the ICU ($P<0.05$). There was no difference in the MPM-0 score. In patients admitted to the ICU $3,1\pm 0,9$ (mean \pm SD) goals of the resuscitation bundle were attained on the ED, similar to the $3,2\pm 1,0$ in patients admitted to the ward ($P>0,05$). The number of organs failing was $1,6\pm 0,5$ in patients admitted to the ICU and $1,6\pm 0,7$ in patients admitted to the ward ($P>0,05$). Patients admitted to the ICU received significantly more fluid in the ED than patients admitted to the ward. **CONCLUSION:** The majority of patients presenting to the ED with severe sepsis are admitted to the ward. To evaluate the effectiveness of the SSC, these patients should also be included. Mortality of patients admitted to the ICU is higher than in patients admitted to the ward, despite similar illness severity scores, number of goals attained from the resuscitation bundle and number of organs failing.

W305) Does the inferior vena cava/aorta diameter index correlate to the central venous pressure? : Seung Ryu¹, Insool Yoo¹, Yeon-Ho You¹, Se-Kwang Oh¹ : 1. emergency department, Chungnam National University, Daejeon, Korea, South.

INTRODUCTION: Purpose: To evaluate the relationship between the inferior vena cava(IVC)/aorta diameter index and central venous pressure (CVP) in the Emergency Department. **METHODS:** We retrospectively investigated whether the IVC/aorta diameter index is correlated to the CVP. We selected the patients who had a computed tomography performed and CVP assessed from September, 2008 to December, 2008. Measurements of the IVC and aorta diameters was performed in conjunction with the computed tomography. The subjects were divided into two groups: those with a CVP of less than 8 cmH₂O (Group A), and those with a CVP greater than 8 cmH₂O (Group B). We collected the data including the patient's age, sex, height, systolic blood pressure, heart rate, hemoglobin level, IVC diameter and aorta diameter. And we analyzed the correlation between the IVC/aorta diameter index and the CVP. **RESULTS:** 80 patients were enrolled in the study. 39 patients were in group A and 41 patients were in group B. The mean for diameter of IVC in group A was 14.98 ± 2.58 mm and 18.84 ± 3.01 mm in group B ($P<0.01$), and IVC/aorta diameter index in group A was 0.72 ± 0.12 and 0.96 ± 0.20 in group B ($P<0.01$). The Correlation coefficient of CVP and IVC was 0.72 ($p<0.01$) and CVP and aorta was -1.5 ($P=0.17$), and that of IVC/Aorta index was 0.69 ($p<0.01$). **CONCLUSION:** The IVC/Aorta index and IVC diameter were correlated to the CVP and there was a difference in the IVC diameter and IVC/Aorta index between group A and group B. Further study is needed to evaluate the usefulness of the IVC/aorta index in the Emergency Department.

Comparison of two groups

	Group A	Group B	p-value
Age(years)	60.72± 17.35	63.17± 15.18	0.51
Height(cm)	163.95±6.66	163.41±8.54	0.75
Body weight(Kg)	63.03±5.86	62.63±8.13	0.80
Systolic BP	100.90±18.91	103.10±16.28	0.57
Heart Rate	96.31±18.18	92.90±23.26	0.46
Hemoglobin	11.10±1.95	11.50±2.05	0.37
IVC diameter	14.98±2.58	18.84±3.01	<0.01
Aorta diameter	20.59±1.91	19.90±2.19	0.14
IVC/Aorta Index	0.72±0.12	0.96±0.20	<0.01



R1) A Description of the Impact of the Long Stay Patients

On Hospital Beds Availability : Marc Afilalo¹, Nathalie Soucy¹, Xiaoqing Xue¹, Antoinette Colacone¹ : 1. Emergency Department, Jewish General Hospital, Montreal, QC, Canada.

INTRODUCTION: Lack of hospital beds to admit emergency department (ED) patients is cited as the #1 cause of ED overcrowding. The hospital beds access block is in part accentuated when non-acute patients occupy acute care beds for extended periods. Certain groups of patients occupying acute care beds are known (e.g. long term care, palliative) and there are specific out of hospital resources for them. Nevertheless, there is another group of long stay patients (LSP) whose magnitude on both hospital resources and out of hospital needs are unknown. The goal of this study is to describe the impact of the LSP on hospital beds availability. **METHODS:** Administrative data on hospitalized patients length of stay (LOS) in days from a 637 beds tertiary care hospital (SMBD-Jewish General Hospital) for the years

2004-05 and 2005-06 are described. Mothers and new born babies, long term care patients and palliative patients were excluded. RESULTS: 2004-05: 13,014 patients were hospitalized which represents 123,633 patients-days; 65% of patients were hospitalized from the ED; 94% of patients had an in-hospital stay of < 30 days (77,252 patients-days); 4% stayed 30 to 59 days and (23,285 patients-days); 1% stayed 60 to 89 days (8,683 patients-days) and 1% stayed ? 90 days (13,860 patients-days). 2005-06: 13,716 patients were hospitalized which represents 126,706 patients-days; 67% of patients were hospitalized from the ED; 94% of patients had an in-hospital stay of < 30 days (82,389 patients-days); 4% stayed 30 to 59 days (23,864 patients-days); 1% stayed 60 to 89 days (10,754 patients-days) and 1% stayed ?90 days (9,699 patients-days). CONCLUSIONS: Although patients with a LOS ? 30 days represent only 6% of hospitalized patients, they occupy 123 beds daily, representing at this hospital 1 out of 5 beds. Thus increasing the turnover of these beds by appropriate out of hospital resources would improve bed accessibility for ED patients.

R2) A Nationwide Comparison of Emergency Department Performance Using Excess Mortality Ratio-based Emergency Severity Index : Sang Do Shin¹, Young Sun Ro¹, Ki Jeong Hong¹, Jeong Eun Kim¹ : 1. Emergency Medicine, Seoul National University Hospital, Seoul, Korea, South.

INTRODUCTION: The Excess Mortality Ratio-based Emergency Severity Index (EMR-ESI) using chief complaint code (n=5,440), which showed high discriminatory power for hospital mortality (AUC=0.944), was derived from the ratio between age-gender standardized mortality of each code versus age-gender standardized mortality of 2006 general population in Korea in previous study. The goal of this study is to compare the emergency department (ED) performance using the EMR-ESI. METHODS: Study participants were enrolled from 2008 National Emergency Department Information System Database of Korea. We developed prediction model (Pm) for hospital mortality within 28-days using EMR-ESI and six parameters (age, sex, ambulance delivery, systolic blood pressure (SBP), respiratory rate (RR), and AVPU) from a multivariate logistic regression model. From Pm. W scores which was defined as (=difference between expected mortality and observed mortality per 100 emergency patients) were calculated for every 99 EDs. RESULTS: From 2008 NEDIS database (N=3,053,518), we enrolled 2,651,771 (86.9%) cases which have 4,151 chief complaint codes, to develop the Pm as follows;

$$b = a + b_1(\text{EMR-ESI}) + b_2(\text{age}) + b_3(\text{ambulance}) + b_4(\text{SBP}) + b_5(\text{RR}) + b_6(\text{AVPU}); a = ?7.0563, b_1 = 0.1405, b_2 = 0.4284$$

$$b_3 = 0 \text{ (pre-hospital), } 0.4111 \text{ (inter-hospital), } ?1.0201 \text{ (non-use) } b_4 = 0 \text{ (SBP } ?90), 0.5316 \text{ (arrest), } 1.7117 \text{ (SBP}<90) b_5 = 0 \text{ (10? RR } <30), 0.6132 \text{ (arrest), } 1.062 \text{ (RR}<10 \text{ or RR } ?30) b_6 = 0 \text{ (A), } 0.862 \text{ (V), } 1.0271 \text{ (P), } 2.2748 \text{ (U). Probability of mortality (Pm)}=[1/(1+e^{-b})].$$
The AUC of Pm model for hospital mortality was 0.901. Odds ratio of 10% pm for hospital mortality was 2.367 (95% CI: 2.352 to 2.382). The mean W-score of 99 EDs was 0.23±0.52 (range: ?1.60 to 2.37). Of these, 77 EDs with positive W-score has 6987 excess survivors per year. Otherwise, 22 EDs with negative value has 1764 excess mortality. CONCLUSION: The Pm model using the EMR-ESI and six co-variables was successfully developed and very high discriminative power. The excess survivors and mortality case was calculated to compare ED performance via W-score.

R3) Study of complaint letters sent to an emergency department during a period of six years : Anne Raynaud-Lambinet¹, Eva Studniarek¹, Henri Juchet¹, Dominique Lauque¹ : 1. Rangueil University Hospital- Emergency Department, Toulouse, France.

INTRODUCTION: What's the real incidence of complaint letters in an Emergency Department (ED)? The purpose of this study was to quantify letters sent to an ED and to analyze their contents. **METHODS:** Retrospective study of complaint letters sent to the ED between 2002 and 2007. Four items were analyzed: epidemiology, complaints typology, purposes and hospital answers. **RESULTS:** 100 complaint letters were recorded between 2002 and 2007 for 179197 admissions in ED (incidence: 1/1791). This incidence remained stable over the six years of study (p >0,05). 66% of letters were sent less than a month after the admission. These letters were written by a relative (47%), patient (38%), general practitioner (5%) or lawyer (3%). 153 grievances were counted: 76 about medical problems (diagnostic errors (32), caring defects (23) and no relief of pain (9)) and 67 about department organization (waiting time (11), lack of information (9), violation of human dignity (14) and relationship (21)). More complainants admissions were in winter (60%), at night (65%) and on Saturday (19%). The aim of the letters was a warning (71%) or a compensation claim (19%). 78% plaintiffs obtained an answer (68% in thirty days). 1/3 of the diagnostic errors were recognized (92% due to a defect of bone x-ray readings). 9 complaints ended in arbitration committee, 1 in indemnification, 1 in the administrative court, none in penal. **CONCLUSION:** The complaints incidence in this ED is low. We count as many medical complaints as organizational complaints. Complaint letters must be used as a teaching aid, for example, implementation of morbi-mortality meetings, to improve patients care and ED organization.

R4) Keys to Patient Satisfaction in the Emergency Department : Saeed Abbasi¹, Mohammad A. Zare², Maryam Bahrani¹, Marzieh Fathi³, Hossein Saeedi¹ : 1. Emergency Department, Rasoul-e-Akram Hospital, Tehran, Tehran, Iran. 2. Shohaday-e-haftom tir, Tehran, Tehran, Iran. 3. Imam khomeini Hospital, Tehran, Tehran, Iran.

INTRODUCTION: Patient satisfaction is an important health care outcome. This study evaluates patient satisfaction with the care received for their urgent health problems, at the emergency department of "Shohada ye 7 e Tir" Hospital, Tehran, Iran. Its goal is to recognize the factors that contribute to satisfaction and dissatisfaction. **METHODS:** We used the telephone questionnaire which was designed for this research and used the multistage sampling method. Data have been analyzed using SPSS-15. **RESULTS:** Overall most patients were satisfied with different groups of personnel (94.1% were satisfied from Physicians and 96.2% were satisfied from nurses). 90.1% of the patients said that they would advise this center to their acquaintances. Long waiting time in reception to first Physician visit, personnel behavior and hospital facilities, have significant effects on general dissatisfaction. Arrival type and patient outcome were related with satisfaction. **CONCLUSION:** Decrease in the waiting time, can improve the patients' satisfaction. Nurses and other personnel – except Physicians- need to improve their communication with the patients. The quality and quantity of ED facilities need to be improved. Efforts should be made to get regular feedback from the patients.

R5) Forecasting the Number of Emergency Patients in 2020 : Jeong Eun Kim¹, Sang Do Shin² : 1. Korea University Graduate School of Public Health, Seoul, Korea, South. 2. Emergency Medicine, Seoul National University Hospital, Seoul, Korea, South.

INTRODUCTION: Forecasting of burden of emergency patients is very important for quality management for the emergency care system. This study was to characterize and forecast the number of patients visiting emergency departments (EDs) nation-wide. **METHODS:** To make a forecasting model, we collected time data of patients who visited emergency departments (EDs) over than level 2 in Korea, which are 109 EDs (109/136=80%) among 16 level-1 EDs, 3 specialty care EDs, and total 117 level-2 EDs from 2005 to 2008. Demographic data was from the National Emergency Department Information System (NEDIS), which was initiated at 16 level-1 EDs, and followed by some level-2 EDs step by step. Therefore the EDs were stratified into four categories regarding when they started participating in the NEDIS. The group A (GA) joined the NEDIS in 2005, while the Group B in 2006, the Group C in 2007, and the Group D in 2008. The multiplicative seasonal autoregressive integrated moving average (SARIMA) analysis was separately applied to each of the four categories. The ARIMA predictive model was established and the order of model was confirmed by the Akaike's Information Criterion (AIC) and the Schwartz's Bayesian Information Criterion (SBC or BIC). We predicted the number of patients until 2020 with this model. **RESULTS:** A total of 3,147,075 patients visited 109 EDs for study period. For the optimal AIC, the time lag was set as 12 for the Group A, 12 for the Group B, 8 for the Group C, and 5 for the Group D. With our model, we could predict that the total number of ED visits would reach 5,640,605, which is 1.79 times big as 2008's. The Group A would increase up to 1.94 times, the Group B 1.78 times, the Group C 1.58 times, and the Group D 2.84 times. When forecasting subgroups, the number of elderly patients over than 65 years (2.03 times), ambulance delivery (2.07 times), injury case (2.30 times), and admission (1.86 times) was significantly increased. Otherwise, the number of hospital mortality (1.78 times) was increased less than that of total patients (1.79 times). **CONCLUSION:** With our prediction model, we could successfully forecast the number of ED visits in 2020.

R6) The acceptance of price lists at the emergency department – how do doctors think about it? : Ulf Martin Schilling¹ : 1. Accidents and emergencies, Linköping university hospital, Linköping, Sweden.

Background: Cost-cutting projects can result in irritation among physicians and might be considered both annoying and unnecessary. To gain understanding of physicians view towards price-lists in their daily work and as a cost-cutting tool we performed a study among physicians involved in patients attending the emergency department of a university hospital. They were asked about their views towards the available price-lists as a tool for their daily work and in cost-cutting. **Methods:** An anonymized questionnaire was distributed among the physicians working in internal medicine. All physicians were invited to participate. The data asked for were the level of qualification of the physician (consultant, specialist, senior house officer/registrar (SHO) and junior house officer (JHO)), if the physicians regarded price lists as a usable tool in their daily work (positive/negative) and if they assumed that knowledge about the costs for investigations would have an impact on the total expenses for investigations performed at the clinic. The questionnaires were recollected by the hospitals internal mail.

Statistical analysis was performed using the unpaired Student's T-test, accepting p-levels <0.05 as significant. Results: A total of 27 questionnaires were recollected by our method. Four consultants, 3 specialists, 16 SHOs and 4 JHOs chose to participate in the study. 4 of 4 consultants (100%), 2 of 3 specialists (66.67%), 12 of 16 SHO (75%) and 4 of 4 JHO (100%) considered price-lists to have an impact on the costs for clinical investigations ($p < 0.01$). 3 of 4 consultants (75%), 2 of 3 specialists (66.67%), 11 of 16 SHO (68.75%) and 4 of 4 JHO (100%) regarded price lists as a useful tool in their daily work ($p = 0.051$). Conclusion: Medical doctors at our hospital involved in the caretaking of emergency patients regard price-lists as a possibly useful tool in their daily work, and do consider readily available price-lists to have a major impact on cost-cutting. Interestingly, no difference could be seen between the most junior and the most senior doctors participating in this study regarding their positive attitude towards such lists.

R7) Emergency Medicine as Specialty in Iran: the Experience of Strategic Management Plan Development of an Emergency Department in a University General Hospital : Ali Shahrami¹, Ali Arhami dolatabadi¹, Alireza Ala¹, Mohamad mehdi Furuzaifar¹, Feridon Farahbakhsh¹, Hamidreza Hatamabadi¹, Hossein Alimohammadi¹, Mostafa Alavi Moghaddam¹, Hamid Kariman¹, Afshin Amini¹, Reza Shahrami¹, Behroz Hashemi¹ : 1. Shahid Beheshty University, Tehran, Iran.

INTRODUCTION: The medical system in Iran has recently begun to implement "Emergency Medicine" as a specialty training system. This study introduces the first experience of design and implementation of "Strategic Management Plan" in Imam Hossein University General Hospital with an annual patient load of 150000 patients. **METHODS:** A team was composed of 6 assistant professors, one assistant, an intern (as educational client), a nurse, a head nurse and hospital supervisor. Data was gathered via RAND method (a method in which data is collected through questionnaire accompanied by summaries of articles followed by distribution, marking & redistribution of marked materials and finalization of above mentioned in a group discussion).

First a mission statement was established and extracted by means of "SWOT" method. After situational analysis the proposed strategy was offered in accordance with the institutional situation. **RESULTS:** Overall, main strategies included: In emergency management (1) "Integrating emergency service care providing units". Moving from a divided "specialty based care" to two subdivisions of ED: "acute" and "sub acute" care; (2) "Objective-oriented" strategies in resource allocation by business plan design; (3) University level development strategies: a. "Integrating other hospitals under coverage of University Health System"; b. "Special collaboration plan" with city "EMS"; (4) Facilitation of emergency medicine implementation in Iran: implementing legislative, insurance funding and special pricing system supports at national level.

In research branch

In educational branch

Other than strategies, special challenges both at "intra-hospital" and "outside" shall be presented. **CONCLUSION:**

Introduction of emergency medicine as specialty care in general settings needs well-defined strategies that can manage the challenges of "integrating" divided emergency care in a

"coordinated", "developmental" plan. National level legislative and administrative policies are key factors to guarantee survival of these systems.

R8) Evaluation of long waiting times in the Shariati Hospital Emergency Department in year 2008 : Anita Sabzghabaei¹, Jamak Khorgami¹, Majid Shojaee², Moloud Nikokar¹ : 1. ED, shariati hospital, Tehran, Iran. 2. Emam hosein hospital, Tehran, Iran.

INTRODUCTION: The ED is one of the most obvious symbols of health care system in the community. Based on Canadian standards, the patient must be admitted or discharged at about 4 hours. In our monthly statistical evaluation, we found that some of the patients stayed in the ED for 3 days or more. This caused patient and staff dissatisfaction. Our goal was to calculate patient waiting time in the ED.

METHODS: We conducted a prospective, descriptive study. For 6 months from February to September we evaluated the patient admitting process on the basis of triage and charge nurse records. The number of admitted patients, ED waiting times and dispositions were analyzed. Patients with more than 24 hours waiting were extracted for further analysis and some important data was found from evaluation of their files, consultation with their physicians and talking with charge nurses and inpatient admitting nurses and clerks. **RESULTS:** During the study period (6 months), among 18845 patients who came to our department, 6101 patients (32.4%) were admitted. 85.1% of them were discharged or transferred to wards in the first 24 hours and 909 patients stayed more than 24 hours. Overall, the patients had 23.2±2.25 hours of waiting in the ED before disposition. 30% of patients were discharged from ED. Data analyzed showed that the most important factor in long waiting times were as follows:

1) limited acute care bed and shortage of hospital beds; 2) request of some attending physicians to not admit other wards patients on my ward's beds; 3) request of some attending physicians to not admit their patients on other ward's beds, except in the ED; 4) requesting some non-emergent ancillary tests before transferring to wards; 5) inefficient work of some fellows and chief residents; and 6) insufficient budget of patients for transferring to wards. **CONCLUSION:** On the basis of the above mentioned data, the most important factor in long waiting time in ED is shortage of hospital beds. The best solution for reducing waiting time according to our resources, is referral of non urgent patients to outpatient ward.

R9) Emergency: a ward with potential for independence : Ali Shahrami¹, H. Rahmati¹, Behroz Hashemi¹, Hossein Alimohammadi¹, Hamid Kariman¹, Ali Arhamidolatabadi¹, Hamidreza Hatamabadi¹, Rza Shahrami¹, Banafsheh Shahrami¹ : 1. Shahid Beheshti University, Tehran, Iran.

INTRODUCTION: The emergency ward has always been financially dependent on the government. Lack of income has been rising from low medical terrifies and the high cost of emergency services. As a result emergency beds have been considered as non-approved and overcharged beds in human resources and financial aspects. **METHODS:** The current study aims study aims to collect information on emergency ward incomes and human resource management with the final goal of calculation of emergency ward ultimate income. A university general hospital stands as a medical center along with a business plan. Financial analysis was mapped based on process mapping, documentation procedure and documents

collection before being submitted to insurance parties. According to most frequent errors the action was categorized and being assisted by problem solving approach the ward income was hoped to reach its real amount. **RESULTS:** 8 points will be solved in the first phase of the undertaken analysis. (1)Poor documentation in medical and nursery sections; (2)Poor collection of para clinics; (3)Poor coding of services; (4)Poor supervision in patients' release; (5)Inadequacy in registration of consumables; (6)Lack of obeisance in special insurance regulations; (7)Insurance extraction; (8) Errors in sending the document in certain time. 6 defects in official staff were observed in the analyses. These weak points were resolved with 30 hours training, adding 3 new staff, designing an emergency services registration form and more intra-ward coordination between discharge section, accounting and insurance sections. The most noticeable change has been a 325% surge in emergency income, more admissions & qualitative and quantitative growth of services. **CONCLUSION:** Due to a high rate of duty and poor management, the emergency ward is not receiving 60% of its clinical charges which is hopefully solved by some manipulations. In case, the money making potentials of emergency ward are proved, there might be a possibility of undertaking quality management plans and important of the services standard which is expected to result in more financial benefits.

R10) Development of a business plan for the emergency ward as a strategic priority : Ali Shahrami¹, Behroz Hashemi¹, Hamid Kariman¹, Hossein Alimohammadi¹, Ali Arhami dolatabadi¹, Hamid reza Hatamabadi¹, Afshin Amini¹, Reza Shahrami¹, Mostafa Alavi Moghaddam¹ : 1. Shahid Beheshty University, Tehran, Iran.

INTRODUCTION: In Iran, budget distribution for personnel and equipment is based on the number of approved beds, which is excluding emergency beds. This point of view results in considering emergency beds as an over charged system in the mass view of the ministry of health and not a dynamic structure which is capable of attracting patients or making money. Establishing an emergency branch in universities, emergency medicine was stated as a strategic priorities in "Imam Hossein" university general hospital with 150000 patients annual load business plan. **METHODS and RESULTS:** An execution team was composed of 7 assistant professors, an industrial engineer, a hospital management expert and accounting members. Primitive terms and features were extracted through "semi structural interview" method sessions conducted to develop an executive summary, mission statement, goals and strategies. Strategies were conducted, targeting consideration of emergency beds as approved beds. Strategies were chosen accordingly:

1. Improvement of services in order to increase the patients flow and their satisfaction rate.
2. Development of health information system in ward leading to digitalization of data.
3. Improvement of documentation and coding (California code).
4. Providing current expenses of the emergency ward.
5. Contribution of wards personnel in incomings.
6. Recruiting official and educational staff for financial classification.

CONCLUSION: Developing business plans results in goal directed activities and more dynamic staff. By conducting strategies there is the capability of presenting documented and inductive reasons for obtaining budget and personal for emergency ward independently.

R11) Midlevel Provider Staffing of an Emergency Department Observation Unit : Philip Bossart¹, Troy Madsen¹, Erik Barton¹, Joseph Bledsoe¹, Steve Sugerman¹ : 1. Emergency Medicine, University of Utah,

Salt Lake City, UT, USA.

INTRODUCTION: Very few studies have described staffing models of an emergency department observation unit (EDOU). Since we opened the University of Utah EDOU in April 2006, midlevel providers (physician assistants and nurse practitioners) have staffed the unit from 7 am to 1 am. Emergency physicians are available 24 hours per day for consultation and protocols drive many of the diagnostic tests and treatments. However, midlevel providers independently round on patients in the morning, order and review laboratory and radiological tests, consult specialists, and make patient dispositions. In this study, we describe the complexity of the patients in the EDOU and patient outcomes under a midlevel staffing model. **METHODS:** We performed a retrospective chart review of patients placed in the EDOU over the first 14 months of its existence (April 2006 to May 2007). We looked specifically at patients placed in the EDOU under the two most common protocols, "chest pain" and "trauma". We recorded patient characteristics, length of stay, and admission rates. We also looked for adverse events among patients and followed trauma patients for 30 days to determine any missed injuries. We also looked at patient satisfaction rates and EDOU census for the past year. **RESULTS:** Table one shows patient characteristics for the 895 patients admitted under the chest pain or trauma protocols. There were no deaths, intubations, or loss of vital signs among the trauma and chest pain patients. In 30 day follow up, there were no significant missed injuries among the trauma patients. The 2009 Press Ganey scores for the EDOU show patient satisfaction in the 93rd percentile and patient volume is now averaging 4,140 patients per year. **CONCLUSION:** This study suggests that midlevel providers are capable of fully staffing an EDOU in a busy "level one" trauma center emergency department.

Patient Characteristics

	Chest Pain Patients	Trauma Patients
Number of Patients	531	364
Length of Stay	14.5 Hours	12.75 Hours
Admission Rate	12%	12%

R12) Prescription errors in a Taiwan community hospital emergency department : Po-Sheng Chih¹ : 1. En Chu Kong Hospital, Taipei County, Taiwan.

INTRODUCTION: Medication errors impose tremendous negative impact on patient safety. This issue is extensively evaluated in the pharmaceutical field yet seldom reported in emergency medicine literature. **Objectives:** To determine the frequency of prescription errors in a community hospital emergency department in Taiwan. **METHODS:** Emergency department prescription errors reported by pharmacists in 2008 were collected and analyzed. Prescription errors in different populations and different working shift were explored. **RESULTS:** There were 60 prescription errors reported in 2008. Prescription errors involving adult and pediatric patients were 31 (52%) and 29 (48%) respectively. Frequencies of prescription errors in day shift (8am-4pm) was 12 (20%), evening shift (4pm-0am) 22 (37%), and night shift (0am-8am) 26 (43%). Although pediatric patients accounted for less than 20 percent of all emergency

department visits, prescription errors involving pediatric patient was disproportionately high. The higher prescription error frequencies in evening and night shifts were largely attributed to peak daily pediatric patient visit volume in these periods. CONCLUSIONS: Measures to decrease pediatric prescription errors should be initiated for better protection of this vulnerable population. Physician reeducation and computer-assisted prescription systems might be helpful to improve the problem.

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R14) Medico-Legal Issues Surrounding Multi-Disciplinary Advanced Practice in Emergency Care : Paul S. Barker¹, Rashid Sohail¹ : 1. Radiology, Pennine Acute Hospitals NHS Trust, Bury, Lancashire, United Kingdom.

Many Radiographers within the so called “plain film” modality are now practising extended practice, whether it is a simple “red dot” application, to a fully fledged reporting role issuing formal and final Radiographic reports within their Trust. By taking this role into advanced practice with ‘hot’ reporting, Radiographer initiated discharge or Radiographer-led review clinics, the Radiographer must come into contact with, and actively work with, other health professionals to provide a holistic service for the patient. Although Radiographers working within advanced practice are often working within a clinical team, this does not absolve the individual of personal responsibility and accountability in law, and thus they are liable for their own actions in negligence. For Radiographers interpreting medical images, the causes of error are mainly due to perceptual/cognitive processes involving detection, recognition and decision-making. Unfortunately for Radiographers, the human perceptual system is imperfect and these latter errors are very common. An abnormality can be missed, however, but in medico-legal terms it would not be an error if the weight of opinion is that most Radiologists would miss it. This presentation discusses clinical negligence, the claim, who pays for damages, written documentation, patients' notes and protocols, and their relevance for the Emergency Care clinician working with Radiographers undertaking advanced practice in the Emergency

Department.

R15) Determinants of Healthcare Access on the U.S.-Mexico Border : Susan Watts¹, Patrick Tarwater¹ : 1. Emergency Medicine, Texas Tech University Health Sciences Center, El Paso, TX, USA.

INTRODUCTION: Emergency Departments (ED) are healthcare safety nets in many communities and are flooded with increasing numbers of patients who lack other sources of primary care. This study was conducted to identify the determinants associated with healthcare access in a U.S.-Mexico border community. **METHODS:** Using multiple variable logistic modeling, cross-sectional data from the 2005 Behavioral Risk Factor Surveillance System (BRFSS) for El Paso County, TX was analyzed to identify factors associated with two healthcare access measures: 1) having insurance and 2) having a primary care provider (PCP). Exposure variables included in the multivariable model were age, sex, ethnicity, income, employment, education, and chronic disease (diabetes, hypertension, asthma). Final model selection was based on backwards elimination using p-value >0.10 as exclusion criteria. **RESULTS:** Income level and employment status were significantly associated with the age-adjusted model of having insurance. Specifically, those with annual income >\$50,000 had 8 times greater odds of having insurance than those with income <\$25,000 (p<0.001). Those with income between \$25,000 and \$50,000 had almost 6 times greater odds of having insurance (p<0.001). Unemployed persons had a 73% decrease in odds of having insurance compared to employed persons (p=0.008). Non-Hispanics were twice as likely to have insurance along with those who had attained at least some college education. Similarly, in the age-adjusted multivariable model of having a PCP, college graduates had 3 times greater odds of having a PCP than those who did not finish high school (p<0.0001). In addition, diabetics had 2½ times greater odds than non-diabetics of having a PCP (p=0.018). **CONCLUSIONS:** We found age, income, and education to be significant determinants of healthcare access. In addition, ethnicity and employment were associated with having insurance while being diabetic was associated with having a PCP. Therefore, intervention programs addressing determinants of access may require separate or tailored implementation strategies, at least along the U.S.-Mexico border.

R16) Reliability of Emergency Severity Index Version 4 : Hee Kang Choi¹, Sang Do Shin¹, Gil Joon Suh¹, Yeo Kyu Youn² : 1. Emergency Medicine, Seoul National University Hospital, Seoul, Korea, South. 2. Department of Surgery, Seoul National University Hospital, Seoul, Korea, South.

INTRODUCTION: Objective: To test the reliability and the effect of implementation of Emergency Severity Index 4 (ESI-4) in a different setting, Korea from North America. **METHODS:** This study was carried out from Aug 1, 2008 to Aug 31, 2008 in a single regional emergency center. Target patients for the reliability assessment were those age ≥ 15 years. The collection of the ESI-4 data was done by triage nurses. These nurses had finished the standardized course and had gone through multiple conferences with emergency physicians about clinical cases regarding the ESI-4. A convenience sampling method was used to select participants. Four research nurses and one third year resident scored the ESI-4 on the selected patients as references, independently. We calculated the weighted kappa between the triage nurses and research nurses, and between triage nurses and the emergency resident to evaluate

the reliability of the ESI-4. We used a survey to assess implementation effect (13 items) and self-efficacy (5 items). Results of the survey were analyzed by the groups according to their clinical experience (junior group versus senior group). RESULTS: Total of 2,982 patients visited the emergency center during the study period. We enrolled 478 (16.2%) patients to evaluate the ESI-4 between triage nurses and research nurses, and another 442 (14.8%) patients for triage nurses and the resident. The weighted kappa was 0.49 (0.39-0.55), and 0.47 (0.39-0.55), respectively. Triage nurses were divided into two groups by their clinical experience (3 years), the weighted kappa was 0.47 (0.35-0.58) for the junior group, and 0.50 (0.41-0.59) for the senior group. Analysis of the survey showed relatively high scores on "Faster intervention for high-priority patients", and "Higher accuracy of triage" after implementing the ESI-4. The longer the clinical experience of the respondent, the higher self-efficacy was rated. CONCLUSION: Moderate levels of reliability for ESI-4 was measured among nurses and between nurses and an emergency doctor in a single Korean ED. ESI-4 showed similar effects for each group, but higher self-efficacy reported by the more experienced group.

R17) Emergency Medicine Physician Assistants in the U.S.: Valued Partners in Care : Lee B. Smith¹, Ragan Cohn¹, Scott Arbet¹, Jave Smith¹ : 1. National Commission on Certification of Physician Assistants (NCCPA), Duluth, GA, USA.

BACKGROUND: As the U.S. health care system continues to strain under the weight of its aging, growing, underinsured population, certified physician assistants (PAs) offer critical extension of physician services in emergency medicine and other specialties. DISCUSSION: This poster will provide a view of the U.S. physician assistant profession (including demographics, practice patterns and roles) and will document the trend toward emergency medicine and other specialties.

R18) TELEMEDICINE - EVOLUTION OF AN EMERGENCY DEPARTMENT IN THE E-HEALTH ERA : Bogdan Oprita¹, Laura Balica¹, Cristian Pandrea¹ : 1. Emergency Clinical Hospital Bucharest, Bucharest, Romania.

The experience of the Emergency Department of the Emergency Clinical Hospital Bucharest, Romania. The Emergency Clinical Hospital Bucharest is the biggest Trauma Center, a renowned Cardiology Center with a permanently available Angiography unit and the only Toxicology Center for adults in the southern part of Romania. In the past few years, we saw the Emergency Department of our hospital constantly changing and developing. In 2004, we expanded our activity, starting to operate in prehospital, at first with an emergency helicopter and, since 15th of May 2008, with 20 ambulances in cooperation with the Fire Brigade "Dealul Spirii" Bucharest. The concept of Emergency Department – Mobile Service for Emergency, Reanimation and Extrication (ED-SMURD) was, since the beginning, based on the idea of transmission of medical data between the teams operating in prehospital, SMURD Dispatch and ED, as well as between ED and other departments of the hospital. We already know that telemedicine covers a broad spectrum of services, such as teleconsultation, second opinion, telehomecare and teletraining. It uses video-conference equipment for exchanging medical images or medical data, as well as remote monitoring. In terms of ensuring better medical

support for our patients, the ED evolved from a simple primary intervention unit, the interface between the hospital and the patients, into a much more complex center of teleconsultation, for the patients of the first-response teams we coordinate, a center for telesecond opinion, when the emergency doctor in the field needs advice. But The ED is connected by a PACS system to the Radiology and the CT-scan units, in order to ensure a quicker access to the images. Last, but not least, since 2005 we use teletraining, for a permanent evaluation and improvement of our activity. In the near future we will start receiving video images from the scene of multiple victim incidents and this will help the Dispatch Coordinator to better evaluate the situation and to decide on the best way of managing the intervention. A second major project for our ED is the coordination of the Hospitals Beds Dispatch for the Bucharest area.

R19) Development of Emergency Medicine in The Netherlands : Pleunie P. Rood¹, Terry Mulligan¹ : 1. Emergency Medicine, Erasmus MC, Rotterdam, Netherlands.

We present the current state of Emergency Medicine (EM) in The Netherlands, and we review Dutch EM development. It was not until 1996 that the need for emergency physicians (EPs) was fully recognized. As in other countries, Dutch EDs were run by untrained and mostly unsupervised young doctors. Further justification in starting residency programs can be found in reported increases in number of patients visiting the ED, documentation on a rise of malpractice claims in the ED, etc. There are only 6 countries in the world in which EM is established as a fully mature specialty, and another 35+ countries including the Netherlands are in early stages of development. For successful implementation of EM, development needs to take place at different levels:

- The primary system consists of development of specialty systems, academic development and education. - The second stage involves administrative and management systems and economic structures. - The third stage includes development of legislative structures and national health policy aligned to acute care and EM. In the Netherlands, important steps have been taken since the 1990's, and developments at all three levels are taking place. In 1999 the Dutch Society of Emergency Physicians (NVSHA) was founded, which now has 188 resident members, and 111 trained EP members. In 2004 the Foundation for Education in Emergency Medicine (SOSG) was established, which is a residency-certification body that serves until the Dutch Specialist Registration Board (MSRC) has taken over the certification process of Dutch EPs. Only recently, in 2007, a national curriculum was accredited by the government, implying that it will provide financial support for EM training programs. Additionally, in 2008 the Dutch Medical Specialists Review Committee (MSRC) has recognized EM as a medical specialty in the Netherlands. In our paper, comparisons are made between development of EM in the Netherlands and in other countries around the world. In conclusion, EM in The Netherlands is a young but fast-moving field, and their example of comprehensive EM development can be used as a template for EM development in Western Europe and in other countries.

R20) Workforce Projections for Emergency Medicine in Puerto Rico: A Proven and Constant Exodus to Mainland USA. : Carlos F. Garcia-Gubern¹ : 1. Emergency Medicine, Hospital San Lucas/ Ponce School of Medicine, San Juan, PR, USA.

INTRODUCTION: Our objectives were to: Re-calculate and establish the actual emergency medicine workforce in Puerto Rico (PR); Review and project the time frame to meet the actual demand; and Corroborate the continuing exodus of our trained professionals. **METHODS:** Two mathematical equations were used: 1. Supply equals the number of existing EMP's plus residency trained graduates in EM per year minus the annual attrition rate (3%); and, 2. Demand equals seven (7) full time equivalent positions per Emergency Department (ED) times the total number of ED's in PR. **RESULTS:** Under both scenarios tested, the significant EMP shortage in PR will continue until 2050. The actual calculated shortage is 400 EMP. On average, 60% of all the PR EM programs graduates migrate out of our island to work. This has increased by 20% in the past five years. **CONCLUSION:** There is an actual significant shortage in the Puerto Rico EMP workforce. The increasingly and constant exodus of our professionals has drained the system as does the fact that it will take a long time to make leaders understand the positive impact, of having residency trained EMP's in every ED, on quality patient care, and the whole health care system.

R21) DIRECT DISCHARGE FROM THE EMERGENCY DEPARTMENT TO HOSPITAL AT HOME: AN EFFICIENT OPTION : Sonia Jimenez¹, Albert Antolin¹, Sira Aguilo¹, Oscar Miro¹, Miquel Sanchez¹ : 1. Emergency Medicine, Hospital Clinic, Barcelona, Barcelona, Spain.

INTRODUCTION: Study Objectives- To compare technical quality, patient health outcomes, and degree of satisfaction of patients admitted to hospital at home (HAH) from the emergency department (ED-HAH) with those from standard hospitalization (SH). **METHODS:** Comparative study carried out in a tertiary university hospital. Medical records of patients admitted to our HAH from January 2007 to May 2007 were reviewed. Once discharged from HAH, these patients were also called and surveyed within the next month. The following variables were recorded: demographic and clinical aspects (age, gender, length of stay in the hospital or in the ED, baseline and at admission Charlson index, baseline and at admission Barthel index, number of previous hospital admissions and ED visits within the last year); patient health status at the time of phone survey (current Charlson index, current Barthel index, quality of life measured by means Euro-Qo1-5D), technical quality (need of hospital unplanned readmission; need of hospital admission and/or ED visit within 31 days, 1-3 month or more than 3 month after current HAH episode; appearance of multi-resistant and/or nosocomial infections), and perceived quality (patient's and carer's evaluation on accessibility, continuity of care, safety, intimacy, treatment received, and confidentiality offered by the HAH). **RESULTS:** Patients included: 111 (65 from the ED and 46 from the SH). Phone survey was performed to 76 patients and 57 carers. Length of stay was significantly shorter in patients from the ED compared with those from SH (1.02 ± 0.44 vs 2.23 ± 0.94 days, $p < 0.0005$). No other differences were observed in patients' demographics, clinical aspects and health status, in technical quality, and in perceived quality between both groups. **CONCLUSION:** When HAH is an option, these results seem to indicate that patient hospital stay can be shorter if HAH admittance is directly pronounced, after a short period of patient treatment and stabilization, from the ED instead of SH. This measure is safe, and well perceived by the patient and their relatives.

R22) PSYCHO-SOCIAL FACTORS DETERMINE PATIENTS AND CARERS JOINT ACCEPTANCE

OF HOSPITAL AT HOME FROM THE EMERGENCY DEPARTMENT : Sonia Jimenez¹, Sira Aguilo¹, Albert Antolin¹, Victor Gil¹, Miquel Sanchez¹ : 1. Hospital Clinic, Barcelona, Catalonia, Spain.

INTRODUCTION: Study Objectives- To identify factors associated with joint acceptance by both the patient and their carer when hospital at home (HAH) is directly proposed from the emergency department (ED). **METHODS:** Prospective observational cohort study of patients seen at the ED and with these inclusion criteria: need for hospital admittance, ability to be interviewed, and availability of an informal carer. Patients and carers were interviewed in the ED once need for hospital admission had been decided. Medical records were also reviewed. The dependent variable was defined as the predisposition to a joint acceptance of HAH. From each patient, we recorded as independent variables: demographic characteristics, factors related to their health, comorbidities, and current illness, and psycho-social perceptions related to HAH. From each carer, we recorded demographic and social characteristics and psycho-social perceptions related to the HAH. Relation among variables was tested by means of logistic regression analysis. **RESULTS:** We included 129 patients and 129 carers. In 56% of pairs (patient-carer), HAH was jointly accepted. Variables significantly associated with joint acceptance were: patient lived with relatives (OR 17.2, 95% CI 1.5-192.2, p=0.02); patient positively valued family company (OR 6.4, 95% CI 2.1-19.1, p=0.001); and, both of them were not afraid of oxygen handling by the carer (OR 3.7, 95% CI 1.3-10.2, p=0.01). **CONCLUSION:** The joint acceptance of HAH from the emergency department by patients and carers does not depend on patients' baseline functional status and current illness, but on psycho-social factors regarding HAH care.

R23) A Protocol to Improve Door-to-EKG Times in the Emergency Department : Matthew Mostofi¹, Erin Tivnan¹, Brien Barnewolt¹, Alexandra Penzias¹, Scott Weiner¹ : 1. Emergency Medicine, Tufts University Medical School, Milton, MA, USA.

INTRODUCTION: Time is of the essence in the treatment of acute myocardial infarction. As part of a multi-disciplinary process to improve our hospital's door-to-balloon times in these patients, we instituted various techniques focusing on improving the door-to-EKG times in eligible ED patients. **METHODS:** In 2007, our ED instituted a protocol in which all patients over age 35 with chest pain or possible angina equivalent (including epigastric pain, shortness of breath, dizziness, upper back pain, palpitations and others) receive an EKG within 10 minutes of arrival to the ED. For walk-in patients, we provided a chair and additional EKG machine at triage to rapidly perform the EKG by an ED technician. For EMS patients, nurses were instructed to immediately obtain the EKG in a designated area and then move the patient if necessary. EKGs were handed to any attending physician in the ED for quick review. We measured the time from arrival to EKG in all such patients during an 18 day period after the intervention and a similar control time period prior to the intervention. Chief complaints, modes of arrival, time to EKG and rates of performance of EKGs in eligible patients were recorded. **RESULTS:** 145 patients met inclusion criteria (by chief complaint and age) in the control cohort, and 105 (72.4%) had an EKG. 163 patients were included in the study cohort, of which 126 (77.3%) had an EKG. The average time to EKG before the intervention was 71.3 minutes (95% CI 55.8-86.8), median 36 minutes (IQR 19.0-92.5), and 9/105 (8.6%) were

performed in 10 minutes or less. The average time to EKG after initiation of our protocol was 30.3 minutes (95% CI 23.4-37.3), median 16 minutes (IQR 10-29), and 35/126 (27.8%) were performed in 10 minutes or less. The difference in time to EKG was statistically significant ($p < 0.001$), as was the percentage of EKG performance < 10 minutes ($p = 0.004$).

CONCLUSIONS: A multi-focal process to improve door-to-EKG times, including institution of a formal protocol, EKGs from triage and a designated area for obtaining EKGs for EMS patients is useful to decrease door-to-EKG times in patients with chest pain or anginal equivalents.

R25) Benchmarking in the emergency area in a Department of Health : Mar Lopez¹, Jose Minguez¹, Pedro Garcia¹, Javier Millan¹, Isabel Lopez¹, Juan Gomis¹ : 1. Hospital de la Ribera, Alzira, Valencia, Spain.

INTRODUCTION: Aim: To assess the impact of a unique management model combining the different emergency areas included in a Department of Health on the activity of an emergency department (ED) and the results of developing a Center for Integrated Health (CIH) which acts as a link between emergency attention at continued attention points (CAP) and the ED.

METHODS: Over a 3-year period from 2004 to 2007 we performed two separate studies in the Department of Health. The first descriptive study evaluated different elements necessary to provide emergency assistance in an integrated system. The second study assessed the usefulness of the CIH (before-after study). **RESULTS:** The number of emergency department visits in the area of influence decreased by 9.2% in the ED since the Center for Integral Health (CIH) started to work. The number of visits to the CIH has increased by 60.2%.

CONCLUSIONS: The unique healthcare management model improves the use of the available resources in order to satisfy the patient care needs.

R26) Admissions to a Danish acute medical admission unit : Mikkel Brabrand¹, Lars Folkestad¹ : 1. Sydvestjysk Sygehus, Esbjerg, Denmark.

INTRODUCTION: Denmark is in the process of reorganizing the acute medical care system. Emergency departments are being established but most hospitals in Denmark still have separate medical, surgical and pediatric admission units. In order for planning these new emergency departments, it is interesting to know which patients are being admitted today. The national and local registries in Denmark only register the discharge diagnosis at release from the hospital, but not the diagnosis at admission. We conducted this prospective observational study of admission diagnoses to an acute medical admission unit to clarify the admission diagnoses.

METHODS: All patients admitted to the acute medical admission unit at the regional hospital of Esbjerg, Denmark, from October 2nd 2008 to February 19th 2009 were prospectively included. A questionnaire was completed by both receiving nurse and doctor. The admission diagnosis was entered as plain text. This was later converted to an International Classification of Diagnosis, 10th revision (ICD-10) diagnosis by one of authors. All data are presented descriptively. **RESULTS:** A total of 3,055 patients entered the study and the admission diagnosis was not noted for 1,028 patients (33.6%). The ten most common diagnoses were acute coronary syndrome (10.4%), pneumonia (6.5%), intoxication (6.5%), chronic obstructive

pulmonary disease (COPD) (5.3%), deep venous thrombosis (4.2%), dyspnea (4.0%), fever (3.3%), dehydration (2.5%), syncope (2.2%) and atrial fibrillation (2.1%). When collapsing related diagnoses into groups (e.g. COPD, dyspnea and asthma), 578 patients (18.9%) were admitted due to heart disease, 396 patients (12.9%) due to infection and 317 patients (10.4%) due to dyspnea. 189 patients (6.5%) were admitted due to intoxication and 169 (5.5%) for venous thromboembolism. 35 patients (1.1%) were admitted due to diabetes and 13 with altered mental state (0.4%). **CONCLUSION:** The most common admission diagnosis at the acute medical admission unit at Esbjerg Sygehus was ACS and as a group suspected heart disease was the most common reason for admission. A pattern we believe seen at most hospitals in Denmark.

R27) Meta-analysis in behavior consultation for improvement of physical activity in primary health care : Manige Kalantari meibodi¹, Mohamad Kalantari meibodi¹ : 1. nurse department, Mashed, Mashad, mashad, Iran.

INTRODUCTION: In this paper with use of USPSTF (United States Preventive Service Task Force) study there is reliable evidence to show some advice about behavior consultation in primary health service for improvement of physical activity in patients. **METHODS:** At first we performed a meta-analysis over different investigations in past years (2003) that done by USPSTF about improvement in physical activity in the community and results of this research was written in American nursing journal in 2003.

Result: 1. We understand regular physical activity per day can result in improvement of acute coronary syndrome condition and diabetes mellitus and prevention of obesity and osteoporosis in the population. 2. We understand physical activity at least 30 minute per day such as walking or cycling per day can be effective in prevention of coronary disease. 3 Consultation with familiar physician and psychological consultation can result in encouraging patients to do physical activity. **CONCLUSION:** We advise all of the people should decide to perform physical activity routinely per day. We should make people aware of different methods to perform physical activity in schools and colleges and give warning information by the media and providing places for people, such as park and exercise stadiums, and individual education planning for physical activity.

R28) How to Shorten the Arrival Time of Emergency Department Consultation : Chi-Hsieh Lu¹, Jui-Jen Lu¹, Hsin-Jun Lu¹, Ying C. Huang¹ : 1. Chiayi Christian Hospital, Chiayi City , Taiwan.

INTRODUCTION: Emergency physicians rely on consulting physicians to bring their expertise to a significant percentage of patients who require care that is beyond the scope of emergency medicine training and practice. Time-efficient consultations cannot only enhance the emergency department (ED) throughput but also improve patients' satisfaction. Herein we reported our experience in shortening the arrival time of ED consultation. **METHODS:** This is a tertiary referral hospital that serves about 95,000 ED visits annually. About 13% of ED visits need consultation of other specialties during their visits. We began our stage I of improvement by using a computer-based informatics system to send the message in addition to the traditional paging or mobile phone calling since June 2006. When the consultant arrived in

the ED, they had to login on the computer as the arrival time. Results of arrival time were given in feedback to directors of each clinical specialty. Stage II improvement began in April 2008 while the informatics system was upgraded to login automatically once the consultant read any information of the patient in the ED. Stage III began in January 2009 when directors of the worst three departments or divisions were interviewed to discuss how to improve the efficiency of ED consultation every month. Percentages of arriving within 10, 20, and 30 minutes of consulting in each stage were compared by paired-t test. We define the difference to be statistically significant if the P-value is less than 0.05. RESULTS: The mean cumulative percentage of consultation arrivals within 10, 20, 30 minutes were 36.3%, 53.3%, and 61.1% in the first stage; 44.7%, 69.6%, 80.9% in the second stage; and 52.1%, 76.5%, 86.5% in the third stage. There were significant improvements from stage I to II (p = 0.000), stage II to III (p = 0.000), and stage I to III (p = 0.000). CONCLUSION: Computer-assisted informatics system is essential for total quality management. However, well organized procedures and friendly interfaces are helpful to enhance its effectiveness.

R29) Are Emergency Departments Prepared to Prescribe Post Exposure Prophylaxis for Sexual Exposure (PEPSE)?

Proposed Guidelines for Prescribing PEPSE in the Emergency Department Setting : Jonathan Kirk¹, Jonathan Kirk¹ : 1. Emergency Department, Ulster Hospital , Member of Royal College of Surgeons in Ireland, Belfast, Northern Ireland, United Kingdom.

METHODS: 14 Emergency departments in Northern Ireland were contacted and asked what they would do in the event of a patient presenting to the department requesting Post Exposure Prophylaxis for Sexual Exposure (PEPSE). This encompasses all of the emergency departments in the region. **RESULTS:** Whilst all of the departments had a definitive guideline for prescribing Post Exposure Prophylaxis (PEP) for needle stick injuries, none of the 14 departments had a guideline or protocol for prescribing prophylaxis after sexual exposure. A doctor on duty was approached out of 9am-5pm hours regarding prescribing PEPSE in each department. Seven of the departments responded by seeking advice from more senior doctor/consultant. Three departments advised attendance to the regional Genito-urinary Medical (GUM) clinic the following working day. Of the remaining four departments, two advised attendance to their general practitioner during working hours and two recommended prescribing PEP if they thought the individual they were in contact with was HIV positive (with referral onto the GUM clinic). This decision was not based on clinical knowledge. **CONCLUSION:** With the instigation of a public and sexual health advertising campaign advising people who are concerned after possible sexual exposure to an individual who may be HIV positive to attend their local Emergency Department for treatment, we propose a simple guideline to be used with a clear pathway for managing these patients based on the advice from our own regional GUM clinic and the 2006 BASHH guidelines.* Using these guidelines it is possible to calculate a risk stratification placing an individual into a low, medium or high risk of exposure depending on whether the source is known to be HIV positive or Unknown. *Table 1 *Table 2. A 72 hour window exists prior to starting treatment although within 24 hours is ideal. HIV transmission risk per exposure is: Risk that the source is HIV Positive x Risk of

Exposure.

Risk that source is HIV positive

Community group		HIV seroprevalence (%)
Homosexual men		
London		20.30
Scotland		3.20
Elsewhere		3.60
Heterosexuals		
(region of birth)		
	Male%	Female (%)
UK	0.5	0.2
Rest of Europe	2	0.2
North America	2.9	0.1
Central and South America	2.4	0.9
Caribbean	1.2	1.0
North Africa and Middle East	0.5	0.4
Sub-Saharan Africa	6.9	11.3
South Asia	0.5	0.6
East and South East Asia	0.5	0.7
Australasia	0.8	0.1
Injecting drug users		
London	2.90	
Elsewhere in the UK	0.50	

Risk Stratification: High >10%, Medium 1-10%, low <1%

The risk of HIV transmission following an exposure from a Known HIV-positive individual

Type of exposure	Estimated risk of HIV Transmission per exposure (%)
Blood transfusion (one unit)	90–100
Receptive anal intercourse	0.1–3.0
Receptive vaginal intercourse	0.1–0
Insertive vaginal intercourse	0.03–0.09
Insertive anal intercourse	0.06
Receptive oral sex (fellatio)	0–0.04

Needle–stick injury	0.3 (95 CI 0.2–0.5)
Sharing injecting equipment	0.67
Mucous membrane exposure	0.09 (95 CI 0.006–0.5)

Risk Stratification: High >0.5%, Medium 0.1%-0.5%, Low <0.1%

R30) A Case of Gram Negative Sepsis and Myositis Resulting from Pelvic Metastasis of Rectal Carcinoma : Claude D'Antonio¹, Lisa Moreno-Walton¹ : 1. Emergency Medicine, Louisiana State University Health Sciences Center, New Orleans, LA, USA.

CASE: A 57 year old male complained of constant right hip and gluteal pain worsening over 2 weeks. HPI: Onset of pain immediately after sitting on the bathtub ledge > 1 hour, worse with weight bearing or movement; relieved modestly with narcotics. PMH: Abdominoperitoneal resection, ileal diversion for Stage IIIB low grade rectal adenocarcinoma 10 weeks ago. Transgluteal drainage of post surgical abscess; drain removed 6 weeks ago. Review of Systems: Recent shaking chills; otherwise wnl. Initial vital signs: pulse 89, BP 123/85, respirations 20, room air O2-98%, temp 99.3F. Thin male in left lateral decubitus position, unable to lie supine due to pain. Physical Exam: HEENT-NCAT. Neck-normal. Cardio-regular. Lungs-Clear. Abdomen-non-distended,soft,non-tender; ostomy pink,patent,guaic negative stool. Extremities-tender to gentle palpation over right hip,thigh,and buttock. No skin changes or fluctuance noted. Solid 3x3cm, immobile, non-tender mass over sacrum. Neuro-Strength diminished in R leg. Unable to test gait. Reflexes normal. Sensation grossly intact. Repeat vitals: pulse 155, BP 118/74, respirations 20, temp 101.2F, pt exhibiting rigors. Interventions: Patient given 2L NS bolus, Vancomycin, Zosyn IV. Lab: WBC 13.6 (87% neutrophils) H/H 8.5/26.5, platelets 624, AST 45,ALT 87,ALK 335. CRP 19.24. ESR 133. Blood Cultures drawn. Right hip plain films- degenerative changes; no fracture, lytic or blastic lesion. CT scan of abdomen-severe degenerative changes R hip suspicious for metastasis, fluid in pelvis, lytic lesion right anterior iliac crest. 3.2x2.8cm enhancing mass R gluteus. No abscess. Hospital Course: Admitted to Internal Medicine with Surgery consult. IV antibiotics continued with Cipro added. That night ED notified by lab that blood cultures + gram negative rods both bottles; later identified as Serratia marcescens. Morning of PAD 2, MRI revealed diffuse enhancement of pelvic musculature most notably R gluteals, obturator and iliopsoas. IV antibiotics continued until repeat blood cultures negative. Patient was discharged on PAD 6 for 10 days IV antibiotics on outpatient basis.

R31) Cellulitis: Infectious or Non-Infectious? : Secgin Soyuncu¹, Firat Bektas¹, Alp Giray Aydin¹ : 1. Department Of Emergency Medicine, Akdeniz University Faculty Of Medicine Hospital, Antalya, Turkey.

BACKGROUND: Cellulitis is an inflammatory disease that involves the skin and subcutaneous tissues that frequently leads to office visits and hospital admissions. Most cases of cellulitis can be attributed to an infectious cause. However, some underlying causes such as poor patient adherence, antibiotic resistance, underlying deep-seated infection, foreign body–related

infection, and depressed immune status may cause challenging states of cellulitis resistant to conventional antimicrobial therapy. As well as infectious cellulitis, non-infectious causes should also be considered when faced with a challenging cellulitis. CASE: An 83-year-old female with a history of chronic lymphocytic leukemia presented with fever and facial skin lesions to the emergency department. Oral antibiotic therapy was prescribed for the diagnosis of facial cellulitis at another hospital, however the skin lesions did not resolve in 5 days time. Dermatologic physical examination revealed subepidermal edema, reddish blue-violet papules and plaques. Skin lesions responded to systemic steroid treatment at the end of the first week. DISCUSSION: Sweet's syndrome is also referred to as "acute febrile neutrophilic dermatosis". This condition was originally described by Dr Robert Douglas Sweet in 1964. The syndrome is characterized by pyrexia, elevated neutrophil count and skin lesions. Systemic corticosteroids have been considered the 'gold standard' for the treatment of patients with Sweet's syndrome. In the present case report, we report a rare non-infectious cause of cellulitis which was resistant to antibiotics and improved with steroid therapy.

R32) "Doctor, fluid yesterday was not so ugly" : Carrasco M. Gomez¹, Trigueros N. Ruiz¹, Izquierdo Barnes¹ : 1. Hospital Reina Sofia, Murcia, murcia, Spain.

BACKGROUND: Enterococcus faecalispp is a frequent cause of bacteremia, endocarditis, and nosocomial infection, but there are very few cases of septic arthritis. We evaluate a patient for consultation with signs of crippling knee pain, articular effusion, and discern between the different causes of arthritis. As a diagnostic method using the arthrocentesis, with cultures of the fluid, and X-ray. CASE: A 58 yr old women with no history of medical-surgical consultation presented with knee pain that became disabling over 3 hours of evolution without antecedent trauma. A scan showed articular effusion without significant temperature increase and erythema, limitation of mobility at all levels of the movement, and meniscal maneuvers negative. Arthrocentesis revealed fluid which had inflammatory characteristics. In biochemical analysis: WBC:21,600/mm³ and PMN:55%. At 20 hours the woman became febrile to a peak of 39°C. Examination of the left knee highlighted signs of an important articular effusion and marked functional impotence. Investigations: hemogram, and biochemistry were within the normal limits, Rx thorax anodyne, urinalysis =500,nitrite+,abundant bacteria for urine culture trait. Arthrocentesis was performed obtaining 45cc with liquid turbid purulent features. Seeing the fluid the patient exclaimed, "Doctor fluid yesterday was not so ugly." Biochemical analysis of the fluid: WBC:72,000/mm³ and PMN 96%. Reviewing the patient's historical record documented a positive urine culture which isolated Enterococcus faecalispp so it was decided to institute treatment iv with ceftriaxone+cloxacillin. In the cultivation was isolated the same strain of Enterococcus faecalispp. DISCUSSION: A monoarthritis with fever must be considered an infectious arthritis at the top of the initial differential diagnosis. This diagnosis demands rapid collection of synovial fluid and tissue for the specific identification of the infecting organism in its proper cultivation. It is axiomatic that a search is carried out efficiently to identify the septicemic source. In the choice of empirical antibiotic the influence of the clinical status, age and the background of the host should be considered.

R33) All positive cerebrospinal fluid cultures after normal cell counts are contaminants in immunocompetent US emergency department patients : Mark Langdorf¹, Megan Boysen¹, Michael Burns¹

: 1. Department of Emergency Medicine, University of California, Irvine, Orange, CA, USA.

INTRODUCTION: Previous literature on meningitis reports that cerebrospinal fluid (CSF) culture contaminants are threefold more common than true pathogens. Clinical follow-up of patients with CSF contaminants is costly, time-consuming, and potentially unnecessary. In this study, we hypothesized that, in immunocompetent Emergency Department (ED) patients with normal CSF cell counts and negative Gram stains, all positive bacterial cultures are contaminants and patient follow-up is unnecessary. **METHODS:** We retrospectively reviewed 191 ED charts of patients with positive CSF cultures over 5 years. We abstracted lumbar puncture results, disposition, and follow-up activities, and determined monetary charges. **RESULTS:** There were 137 patients (72%) who met inclusion criteria with CSF white blood cells

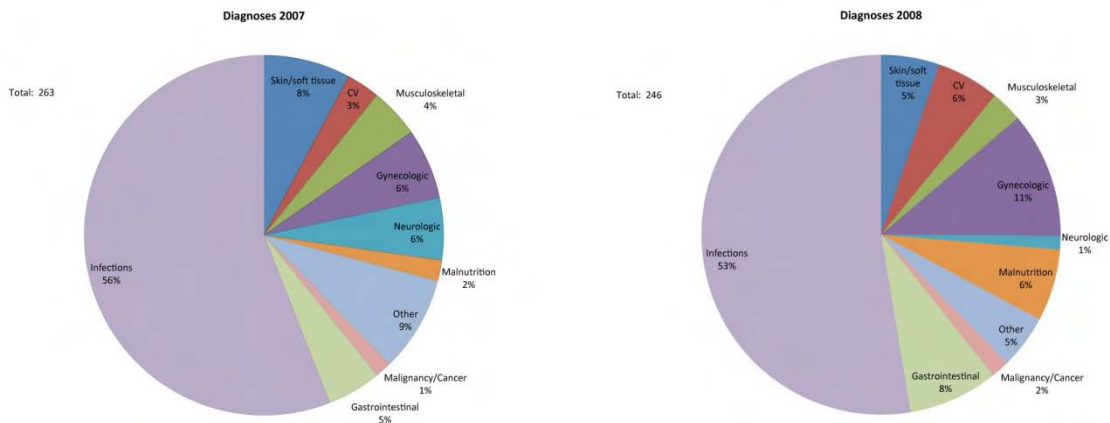
R35) Two episodes of Fournier's Gangrene in one patient treated with Hyperbaric Oxygen Therapy : Janusz Sokolowski¹, Kinga ` Niewinska¹, Jacek Piechocki¹, Juliusz Jakubaszko¹ : 1. Chair of Emergency Medicine, Wroclaw Medical University, Wroclaw, Poland.

BACKGROUND: Fournier's Gangrene (FG) is rapidly progressive (to abdominal wall, retroperitoneal region) necrotizing soft tissue infection which starts in the perineum, or scrotum. FG is found usually in immunocompromised patients. Mortality rate: 7,5-42%. **CASE:** A 29 year old man, alcoholic, was admitted to E.R because of severe pain in the perianal region, which lasted 2 days. He was in general poor condition, with fever. Physical examination revealed tenderness over the perianal region, and signs of severe sepsis. CT of the pelvis and abdomen revealed inflammatory changes over the perineum, gluteal region, scrotum, sacral region, but without gas in soft tissue. Emergency operation confirmed diagnosis of FG. Fournier's gangrene severity index (FGSI) was 10. After first wide debridement patient was transferred to hyperbaric centre. He wasn't in respiratory failure and was treated in monoplace chamber, twice daily, 2,8ATA for 7 days. In the meantime debridement was repeated 2 times. After second HBO session signs of severe sepsis receded. On the 10th day of hospitalization wounds were partially sutured, and covered by flaps. CT scans of abdomen and pelvis, colonoscopy, cystoscopy didn't reveal a source of infection. Idiopathic FG was diagnosed. Alcohol abuse (without signs of liver failure), and probably poor hygienic conditions were predisposing factors. After 6 months the patient was admitted again with signs of FG, and sepsis. As previously he was operated and treated with HBO (24 session twice daily). 4 limited debridements were performed. The wound was sutured without the need for skin flaps. Sepsis disappeared after the 1st day. Additionally performed tests didn't reveal the reason of FG. **DISCUSSION:** In the presented case we are going to emphasize that HBO treatment, if started immediately, can prevent the development of septic shock even in patients with severe sepsis. HBO therapy in monoplace chamber can be safely used in patients with severe sepsis. HBO therapy is especially useful with high FGSI (FGSI>9 is connected with high mortality). In some cases of FG the etiology can not be found.

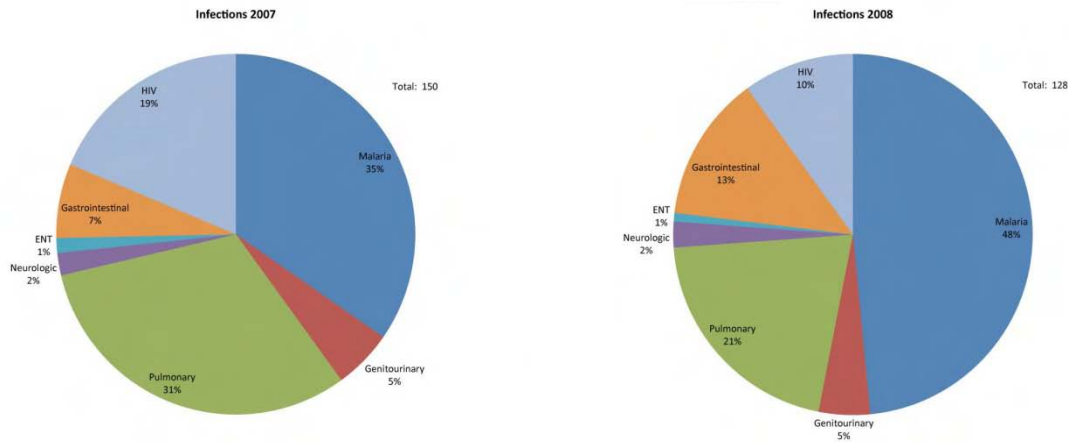
R36) Infectious Disease Related Admissions In Mwami Zambia Over A Two Year Period : Robert L. Riepenhoff¹, Scott A. Heinrich¹, Janet Lin¹ : 1. Emergency Medicine, University of Illinois at Chicago,

Chicago, IL, USA.

INTRODUCTION: Mwami Adventist Hospital is located in rural eastern Zambia. The hospital has 210 beds and admits patients from the outpatient clinic, which sees close to 60 patients per day. The purpose of this study was to describe characteristics of these admissions so as to better facilitate future interventions at this hospital. **METHODS:** All documented inpatient encounters over a four-week span from June to July 2007 and 2008 were reviewed for patient demographics, length of stay, diagnosis, and mortality. Diagnosis was classified into nine categories with infections further subclassified into malaria, HIV/AIDS, pulmonary, GU, GI, CNS, and ENT. Hospital employee rosters for 2007 and 2008 were obtained for comparison analysis. **RESULTS:** There were 177 hospital admissions in both 2007 and 2008 with similar patient demographics both years. Females made up 52% in 2007 and 61% in 2008. Age ranges were from one week to 97 years old with the majority less than 65 years old. There were 21 inpatient deaths in 2007 and 21 in 2008. Infections made up the majority of diagnoses in 2007 and 2008 with 56% and 53% respectively. There was a decrease in HIV related hospital admissions in 2008 accounting for 10% of infections down from 19% in 2007. A decrease in pulmonary related infections was seen in 2008 accounting for 21% down from 31% in 2007. There was an increase in malaria associated hospital admissions with 48% of infections in 2008 up from 35% in 2007. There was no significant change in hospital employees. **CONCLUSION:** Our study correlates with WHO data indicating high levels of infectious disease in Zambia, as well as trends of decreasing HIV prevalence. We speculate that the decrease in HIV related admissions was secondary to increased patients treated in the hospital's HIV clinic and better compliance with ARV medications. There may have been a decrease in pulmonary infections secondary to decreases in co-infections of TB and HIV. Further studies may focus on interventions including increasing access to care, education, knowledge of disease, availability of ARVs, treatment of co-infections, and increasing hospital staff.



Diagnoses Comparison 2007 - 2008



Infections Comparison 2007 - 2008

R37) MANAGEMENT OF VARICELLA-ZOSTER VIRUS INFECTION IN THE EMERGENCY DEPARTMENT : Miguel Mariné-Blanco¹, Miquel Sánchez-Sánchez², Manuel Moya-Mir³, Luis García-Castrillo⁴, Montserrat Farré-Utges⁵ : 1. Spanish Varicella-Herpes Zoster Study Group, Madrid, Madrid, Spain. 2. Spanish Varicella-Herpes Zoster Study Group, Barcelona, Barcelona, Spain. 3. Spanish Varicella-Herpes Zoster Study Group, Madrid, Madrid, Spain. 4. Spanish Varicella-Herpes Zoster Study Group, Santander, Cantabria, Spain. 5. Spanish Varicella-Herpes Zoster Study Group, Badalona, Barcelona, Spain.

INTRODUCTION: The objective was to describe the management of patients with Varicella-Zoster virus infection in the Emergency Department (ED) of Spanish hospitals.

METHODS: Descriptive cross-sectional study of patients, >18 years with a diagnosis of chickenpox (C) or herpes zoster (HZ) in the ED of 43 Spanish hospitals. The research was carried out from April to Sept 2008. Demographic and clinical details were recorded in a specific questionnaire. Results were analysed by both descriptive and analytic method.

RESULTS: The total numbers of patients were 677 of which 150 (22%) had C and 527 (79%) had HZ. The average age was lower in patients with C ($p < 0.001$), 35.6 ± 12.8 years old vs. 58.1 ± 19.2 years old. Patients from tropical countries had basically C and patients from warm countries had HZ ($p < 0.0001$). The consultation reason in the ED was pain in the patients with HZ (68.7% vs. 16.0%) and skin rash in C (89.3% vs. 67.4%) ($p < 0.0001$). The risk factors more often were the dermatologic problems (4.7%) in C and the corticoid treatment within previous month, in HZ. The principal complications were severe rash (12.7%) in C and rash infection (8.4%) in HZ. The clinical complications were related to the risk factors in C ($p = 0.045$).

Hospital admission was related with complications in both illnesses ($p = 0.002$, in C and $p < 0.0001$ in HZ). The discharged patients were more often sent to the specialist in HZ than in C (19.3% vs. 4.5%). A total of 648 patients (95.7%) received prescriptions in the ED. Antiviral treatment was used in 50.7% of patients with C and in 84.1% of patients with HZ and the analgesic treatment was used in 64% of patients with C and in 72% of patients with HZ.

CONCLUSIONS: The C was the major illness in patients coming from tropical countries. The

consultation reason was pain in patients with HZ and skin rash in patients with C. Just in the C was there a relationship between complications and risk factors. The hospital admission was related with complications in both illnesses. The specialist control was more often in discharge patients with HZ. Just half the patients with C received antiviral treatment.

R38) Changing Demographics Of Inpatient Admissions In Mwami, Zambia Over A Two Year Period : Janet Lin¹, Robert L. Riepenhoff¹, Scott Heinrich¹ : 1. Emergency Medicine, University of Illinois Chicago, Chicago, IL, USA.

INTRODUCTION: Mwami Adventist Hospital is located in rural eastern Zambia. The hospital has 210 inpatient beds and admits patients from the outpatient clinic, which sees close to 60 patients per day. The purpose of this study was to describe characteristics of these admissions so as to better facilitate future interventions at this hospital.

METHODS: All documented inpatient encounters over a four-week span from June to July 2007 and 2008 were reviewed for patient demographics, length of stay, diagnosis, and mortality. Diagnosis was classified into nine different categories with infections further subclassified into malaria, HIV/AIDS, pulmonary, GU, GI, CNS, and ENT. Employee rosters for the hospital for 2007 and 2008 were obtained for comparison analysis. **RESULTS:** There were 177 hospital admissions in both 2007 and 2008 with similar patient demographics both years. Females made up 52% in 2007 and 61% in 2008. Age ranges were from one week to 97 years old with the majority less than 65 years old. There were 21 inpatient deaths in 2007 and 21 in 2008.

Infections made up the majority of diagnoses in 2007 and 2008 with 56% and 53% respectively. There was a decreased number of HIV related hospital admissions in 2008 accounting for 10% of infections down from 19% in 2007. A decreased number of pulmonary related infections was seen in 2008 accounting for 21%, down from 31% in 2007. There was an increase in malaria associated hospital admissions with 48% of infections in 2008, up from 35% in 2007. There was no significant change in hospital employees from 2007 to 2008.

CONCLUSION: Our study correlates with WHO data indicating high levels of infectious disease in Zambia, as well as trends of decreasing HIV prevalence. We speculate that the decrease in HIV related hospital admissions was secondary to increased number of patients treated in the hospital's HIV clinic and better compliance with ARV medications. There may have also been a decrease in pulmonary infections secondary to a decrease in co-infections of TB and HIV. Further studies may wish to focus on interventions including increasing access to care, education, knowledge of disease, availability of ARVs, treatment of co-infections, and increasing hospital staff.

R39) The Effect of an Outbreak of Legionella Pneumophila on a Local Emergency Department : Eoin Fogarty¹, Stuart Carr¹ : 1. Emergency Medicine, St. Vincents University Hospital, Dublin 4 , Ireland., Dublin 4, Ireland.

INTRODUCTION: On the 8th of July 2008 the national media widely reported the confirmed presence of legionella pneumophila in the water cooling systems in a local office block and the illness was identified in 2 of its workers

Study Objectives: The primary objective was to identify the increased emergency department attendances generated despite the involvement of public health doctors. The secondary objective was the identification of presenting symptoms by these patients. METHODS: Study Design:

Prospective study over an eight day period of patients presenting to the emergency department who had potential exposure to legionella. Setting: Emergency Department (ED), St. Vincent's University Hospital. Protocol: Potential patients were identified at triage with documentation of symptoms. Twenty seven patients had a legionella urinary antigen test sent. RESULTS: During our study period 28 patients attended with potential exposure. On the first day 20 patients attended representing 19% of attendances. Table 1 shows presenting complaints of patients. CONCLUSIONS: Our study shows that despite the early involvement of public health in an outbreak, local EDs can still expect a significant increase in numbers of attendances. No patients required admission suggesting that an increased utilisation of primary care resources could have avoided a significant increase in ED presentations.

R41) NEW INFLUENZA A (H1N1): ORGANIZATIONAL MEASURES IN AN EMERGENCY DEPARTMENT DURING THE 15 DAYS AFTER THE WHO NOTICE : Sira Aguiló¹, Mar Ortega¹, Oscar Miró¹, Ana Vilella¹, Gemma Sanclemente¹, Miquel Sanchez¹ : 1. Hospital Clinic , Barcelona, Spain.

INTRODUCTION: On May 24 2009 the WHO issued a global alert about an influenza outbreak of porcine origin in Mexico, new influenza A (H1N1). Spain is the European country with closer relations with Mexico and has also been the EC country with more new confirmed cases. Two days after the WHO warning the first related consultation came to our emergency department (ED). This paper describes the impact that this epidemic had on the ED activity and the measures put in place to deal with it. METHODS: The study was conducted in a tertiary hospital in Barcelona. Its ED has an average of 93 visits per day. Daily visits were divided into non-suspected and suspected cases (people having fever in the last 48 hours, high or low respiratory tract symptoms and had had contact with someone in Mexico in the last 10 days). In suspected cases we conducted a laboratory test, chest x-ray, a nasopharyngeal swab to determine nucleic acids of the H1N1 and a serology. The number of final diagnoses confirming new influenza A and the main symptoms were identified. Additionally, we reviewed the organizational measures implemented. RESULTS: The overall number of queries was 365 (~23.9 visits per day), 236 non-suspected vs 129 suspected cases. During the first 72 hours, all the cases were attended at the ED. In the following days an outpatient clinic (OC) was enabled for all suspected cases from the triage. In this period 64 patients were attended in the ED (28 suspected) with an extra 118 that were directly discarded by a trained nurse. 183 were attended in the OC (97 suspected). Thus the OC meant that the additional burden on the ED fell from an added 12% the first day to 2% the last 10 days. 4 patients were admitted in the hospital. Suspected patients were treated with oseltamivir. A total of 125 nasal and throat swabs (34.2%) were done (12% positive). The clinical course was benign and the prognosis good in all the cases. CONCLUSIONS: The coordination between different departments is essential to create the right circuitry to face the increased demand for healthcare in the context of an outbreak/epidemic.

R42) Community-acquired pneumonia with higher Fine scores: review of 295 consecutive episodes

admitted to the hospital after evaluation at the Emergency Department. : **Ferran Llopis¹, Carles Ferré¹, Javier Jacob¹, Antonio Juan², Gilberto Alonso¹** : 1. Bellvitge University Hospital, l'Hospitalet de Llobregat, Barcelona, Spain. 2. Sant Joan de Déu Hospital, Sant Boi de Llobregat, Barcelona, Spain.

INTRODUCTION: Our objective is to review the management and outcome of patients with community-acquired pneumonia (CAP) and higher Fine scores admitted to the hospital after evaluation at the Emergency Department (ED). **METHODS:** Design: Descriptive and retrospective study. Setting: A 960-bed tertiary-care teaching hospital in the metropolitan area of Barcelona, Spain. Period: from November 1st 2005 to April 30th 2007. Patients: All patients with CAP and Fine score IV-V admitted to the hospital after evaluation at the ED. Patients with aspirative pneumonia, empyema, immunosuppression, dialysis and/or HIV infection were excluded. Data were collected for demographic variables, CURB-65 score, microbiological findings, antibiotic treatment, length of stay, mortality and attendance to the ED during the month following discharge. **RESULTS:** During the study period, 295 patients with Fine score IV and V were identified among 608 adult patients with CAP. Mean age was 77.6±10.7 years, 203 (68.8%) were men and 218 (73.9%) scored as ≥2 according to CURB-65. A probable or definite microbiological diagnosis was achieved in 171 (58%) cases either by urinary antigen, bacteremia or sputum culture. Regarding treatment, levofloxacin was administered in 50.8% of patients, ceftriaxone in 25.1% and amoxicillin-clavulanate in 18.6%. Length of stay on average was 7.5±6.9 days, 14 patients (4.7%) died and 26 (9.3%) followed home based daily supervision or were transferred to a transitional care unit. Twenty-five patients attended the ED during the month following discharge. **CONCLUSIONS:** 1. In our series, Fine scores IV and V account for almost half the patients with CAP requiring hospital admission. 2. A microbiological diagnosis was achieved in 58% of cases. 3. Mortality rate and attendance to the ED following discharge were low.

R43) Efficacy of Oritavancin at Single or Infrequent Doses for the Treatment of Complicated Skin and Skin Structure Infections : **Lala M. Dunbar¹, Joseph Milata², M. Fitzpatrick², T. McClure², M. M. Wasilewski²** : 1. Medicine/Emergency Medicine, Louisiana State University Health Sciences Center, New Orleans, LA, USA. 2. The Medicines Company, Indianapolis, IN, USA.

INTRODUCTION: Oritavancin (Ori) is a semisynthetic lipoglycopeptide with demonstrated efficacy against gram-positive complicated skin and skin structure infections (cSSSI) including methicillin-resistant *Staphylococcus aureus* (MRSA), when given 200 mg IV daily for 3-7 days or in a daily-dose fashion. Animal and phase 2 and 3 pharmacokinetic data suggest potential for single dose or infrequent doses of Ori as potentially efficacious for cSSSI. **METHODS:** Phase 2, multi-center, double blind, randomized, parallel, active comparator study of patients with gram-positive cSSSI. Patients were randomized to comparator Ori daily-dose, Ori single dose (1200 mg on Day 1), or Ori infrequent dose (800 mg on Day 1/optional 400 mg on Day 5). IV placebo was given to maintain blind. Signs and symptoms of cSSSI, blood/cSSSI cultures, and safety measures were assessed at predetermined times. Clinical efficacy was assessed at end of therapy, test of cure (TOC), and late follow-up (LFU). **RESULTS:** 302 patients received Ori (100 daily dose; 99 single dose; 103 infrequent dose). Efficacy of single and infrequent dose was similar to daily dose at TOC. The rate of treatment emergent adverse

events was similar between dosing groups and all were well tolerated. CONCLUSION: Single and infrequent doses of oritavancin were as efficacious as daily doses for cSSSI caused by gram-positive pathogens, including MRSA. Safety and tolerability were similar among dosing groups.

Pop (N)	TOC Cure Rate (%)		
	MD ORI 200mg Daily 3-7days	SD ORI 1200mg D1 (CI 90%)	ID ORI 800mg D1/ 400mg D5 (CI 90%)
ITT (300)	72.4	81.8 (-1.7,17.8)	78.2 (-5.8,14.6)
CE (228)	72.4	81.5 (-2.5,18.2)	77.5 (-6.8,15.4)
MRSA CE (82)	78.3	73.0 (-25.1,12.9)	87.0 (-6.9,25.3)
ME (161)	69.1	79.3 (-5.2,20.0)	81.3 (-2.9,22.6)
LFU Relapse (%)			
CE (160)	0	1.6	3.7

R44) DIFFERENTIAL CHARACTERISTICS BETWEEN THE IMMIGRANT POPULATION AND PEOPLE FROM SPAIN DIAGNOSED OF TUBERCULOSIS : August Supervia¹, Oriol Pallàs¹, María Teresa Martínez¹, María Jesús López¹, Silvia Mínguez¹, Carlos Clemente¹, José Luís Echarte¹, Francisco Del Baño¹ : 1. Emergency, Hospital del Mar, Barcelona, Catalunya, Spain.

OBJETIVES: Tuberculosis is a severe public health care problem. In Spain, the decrease in the number of new cases has been reduced by the increase number of immigrants from countries with a high prevalence of tuberculosis. The objective was to determine whether there were differences between immigrants and Spaniards with tuberculosis.

METHODS: All cases of tuberculosis attended in the emergency department in 2006-07 was carried out. Data regarding the country of origin, age, sex, length of stay in Spain, toxic habits, history of tuberculosis, localization of tuberculosis infection, characteristics of the chest X-rays, resistances, and fate on discharge were recorded.

RESULTS: 103 cases of tuberculosis were diagnosed, 60 in immigrants. The length of the residence time in Spain was 3.9 ± 5.2 years, 38.6% of which had lived in Spain for 1 years or less. As compared with patients from Spain, immigrants were younger (34.4 ± 11.6 years vs. 48.8 ± 20.5 years, $P < 0.001$), had a lower percentage of smoking history (34% vs. 63%, $P = 0.005$), liver disease (5% vs. 26%, $P = 0.004$), diabetes (3% vs. 16%, $P = 0.034$), history of previous tuberculosis (5% vs. 23%, $P = 0.013$), and other associated diseases (0% vs. 12%, $P = 0.012$). No significant differences in clinical symptoms between the two groups were observed, although a trend to refer fever at home among immigrants was noted (73% vs. 55%, $P = 0.086$). Pulmonary tuberculosis was the most common localization (78% vs. 79%).

Differences in the chest X-rays findings were not observed, although immigrants showed a higher percentage of apical infiltrates (33% vs. 18.5%, $P=0.075$). Resistances were found in 4 immigrant patients (multiresistance in one) and in 1 Spanish patient.

CONCLUSIONS: The majority of patients diagnosed of tuberculosis in the Emergency Department were immigrants. These patients as compared with those from Spain were younger and had history of tuberculosis and other diseases less frequently. Immigrants referred fever at home more frequently and showed a higher percentage of apical infiltrates.

R45) TUBERCULOSIS IN IMMIGRANTS: CASES DIAGNOSED ACCORDING TO THE COUNTRY OF ORIGIN : August Supervia¹, Oriol Pallàs¹, Erika Esteve¹, Carlos Clemente¹, Silvia Mínguez¹, Alfons Aguirre¹, María Teresa Martínez¹, Francisco Del Baño¹ : 1. Emergency, Hospital del Mar, Barcelona, Catalunya, Spain.

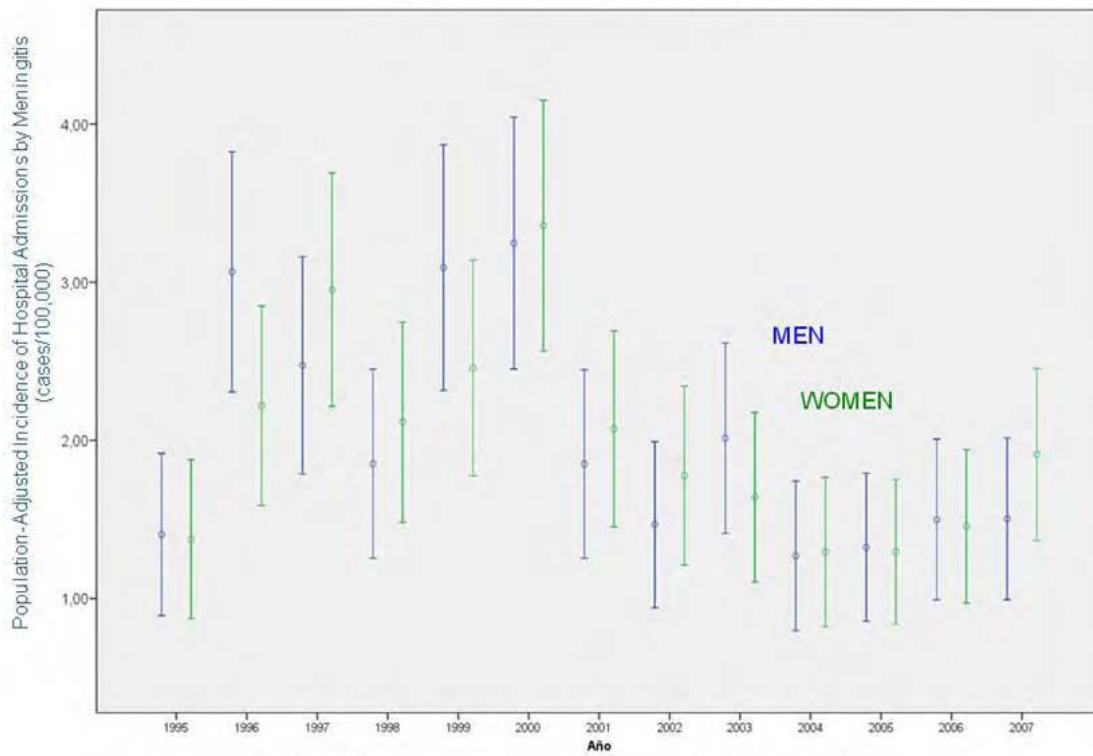
INTRODUCTION: Recently, an increase in the incidence of tuberculosis was observed, in part due to diagnoses made in immigrants. **Objectives:** To describe the distribution of patients diagnosed with tuberculosis in the emergency setting according to their country of origin. The geographical area of the immigrant population included in the census of the reference population of the hospital was determined in order to assess whether there was a relationship between number of cases of tuberculosis and the geographical area of origin. **METHODS:** All immigrant patients with a new diagnosis of tuberculosis who visited the emergency department in 2006 and 2007 were reviewed. Population data were obtained from the municipal census. For each geographical area of origin the percentage that this area represented in relation to the immigrant population included in the census (PIC) was recorded, as well as the percentage in relation to the total number of cases of tuberculosis in immigrants diagnosed in our emergency department (PTU). The PIC/PTU ratio was calculated. **RESULTS:** The number of immigrants in the year 2006 was 54,057. Geographical areas of origin were Western Europe (19.2%), Eastern Europe (2.1%), North Africa (9.9%), Sub-Saharan Africa (no persons from this area were found in the census), Central Asia (18.5%), remaining of Asia (12%), and Central and South America (38.3%). Sixty cases of tuberculosis in immigrants were diagnosed during the study period. The geographical areas of origin were Eastern Europe (11.7%), North Africa (8.3%), Sub-Saharan Africa (3.3%), Central Asia (30%), remaining Asia (3.3%), and Central and South America (41.7%). In one case, the country of origin was unknown. The PIC/PTU was as follows: Western Europe 0; Eastern Europe 5,5; North Africa 0.8; Sub-Saharan Africa, not evaluable; Central Asia 1.6; remaining Asia 0.3; and Central and South America 1.1. **CONCLUSIONS:** The majority of new cases of tuberculosis in immigrants attended in the emergency department were found in subjects from Central and South America and Central Asia. However, subjects from Eastern Europe showed the highest PTU/PIC ratio.

R46) Epidemiology of Meningococcal Meningitis in the Valencian Community (Spain), 1998-2007: Analysis of Mortality

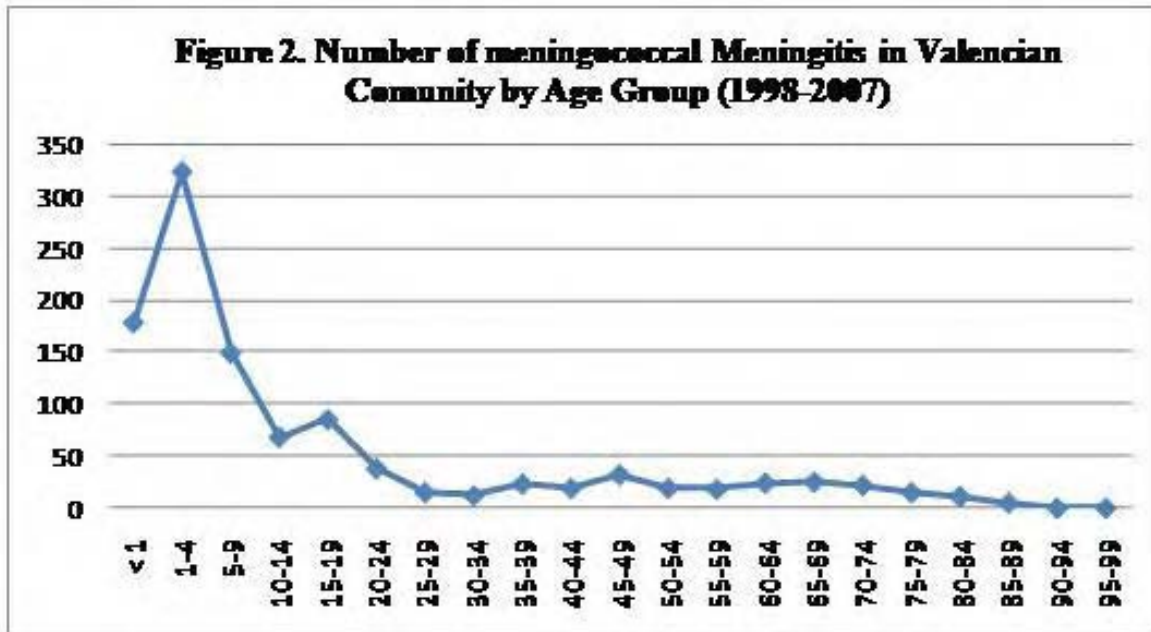
: Juan Carlos Andreu-Ballester¹, Amadeo Almela-Quilis¹, Maria J. Cano-Cano¹, Rosa Sorando-Serra¹, Ana Peiro-Gómez², Elena Gozalvo-Bellver¹ : 1. Emergency, Arnau de Vilanova Hospital, Valencia, Spain. 2. Arnau de Vilanova Hospital, Valencia, Valencia, Spain.

INTRODUCTION: Meningococcal meningitis (MM) is a true medical emergency that requires immediate diagnosis and treatment in a hospital; it can have a lethal outcome with a high morbidity-mortality. We studied the incidence of all meningitis in the Valencian Community (Spain) during a period of 13 years (1995-2007). **METHODS:** We downloaded data on discharge diagnoses of meningitis and meningococemia according to the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), at all 26 public hospitals in the Valencian Community between 1998 and 2007, inclusive. **RESULTS:** There were 4,576,226 hospital admissions during the period (1995-2007) at the 26 public hospitals of the Valencian Community, from them, 1,106 (0.02%) were MM, accounting for 2 cases per 10,000 admissions. There were 543 men (49.1%) and 563 women (50.9%) admitted to the hospital with a primary diagnosis of MM. The mean age of patients was 17.2 (95% CI, 15.8-17.5) years. The global age-standardized incidence rate was 2 cases per 100,000 populations. Figure 1 shows the age-standardized incidence rates of hospital admissions due to MM by sex. Figure 2 shows number of meningitis by age group. There were 89 deaths (8%) due to MM during the study period. Mortality by age group is shown in the Figure 3. Mortality was associated with chronic kidney disease (OR, 17.70 [2.92-107.39]; p=0.004), otitis media (OR, 8.83 [1.95-40.11]; p=0.014), human immunodeficiency virus disease (OR, 5.58 [1.45-23.91]; p=0.030,) and hypertensive disease (OR, 2.55 [1.20-5.42]; p=0.031). **CONCLUSIONS:** The incidence in the Valencian Community was 2 cases per 100,000 populations. There are no differences by gender. MM is more common in children (1-4 years old). Mortality was associated with chronic kidney disease, otitis media, human immunodeficiency virus disease and hypertensive disease.

Figure 1. Population-Adjusted Incidence of Hospital Admissions by Meningococcal Meningitis, according to sex, The Valencian Community, 1995-2007.



Circles represent the annual incidence rate, and bars the 95% confidence interval.



R47) Role of the Emergency Department in HIV/AIDS Care: Lessons Learned in Western Kenya : Paul B. Muganda¹ : 1. Accident and Emergency, Moi teaching and referral hospital Kenya, Eldoret, Kenya.

BACKGROUND: This paper highlights the unique role that the emergency department can and should play in turning the tide against the HIV pandemic that has claimed over 2.4 million Africans, with the over 90% of the world HIV/AIDS cases in Sub-Saharan Africa. The emergency department acts as the primary point of care for the majority of patients in resource poor settings, particularly in the rural areas in Africa, thus it presents an opportunity for HIV testing and referral to comprehensive care. DISCUSSION: We realised that patients who came with advanced AIDS disease had been previously seen at the emergency department several times and treated for their complaint without being offered HIV education and testing. Late presentation is associated with poor response to antiretroviral therapy. It was from this understanding that our department began HIV/AIDS testing and referral. Our experience proves that this undertaking is feasible and saves more lives when testing and referral is offered to all and we recommend a greater involvement of the emergency department in HIV care especially in Sub-Saharan Africa. The paper is published in the international journal of

emergency medicine #IJEM22R2 2008.

R48) Case Report: ACS linked to MRSA pneumonia : Sarah Herron¹, Michael J. Lambert¹ : 1. Advocate Christ Medical Center, Oak Lawn, IL, USA.

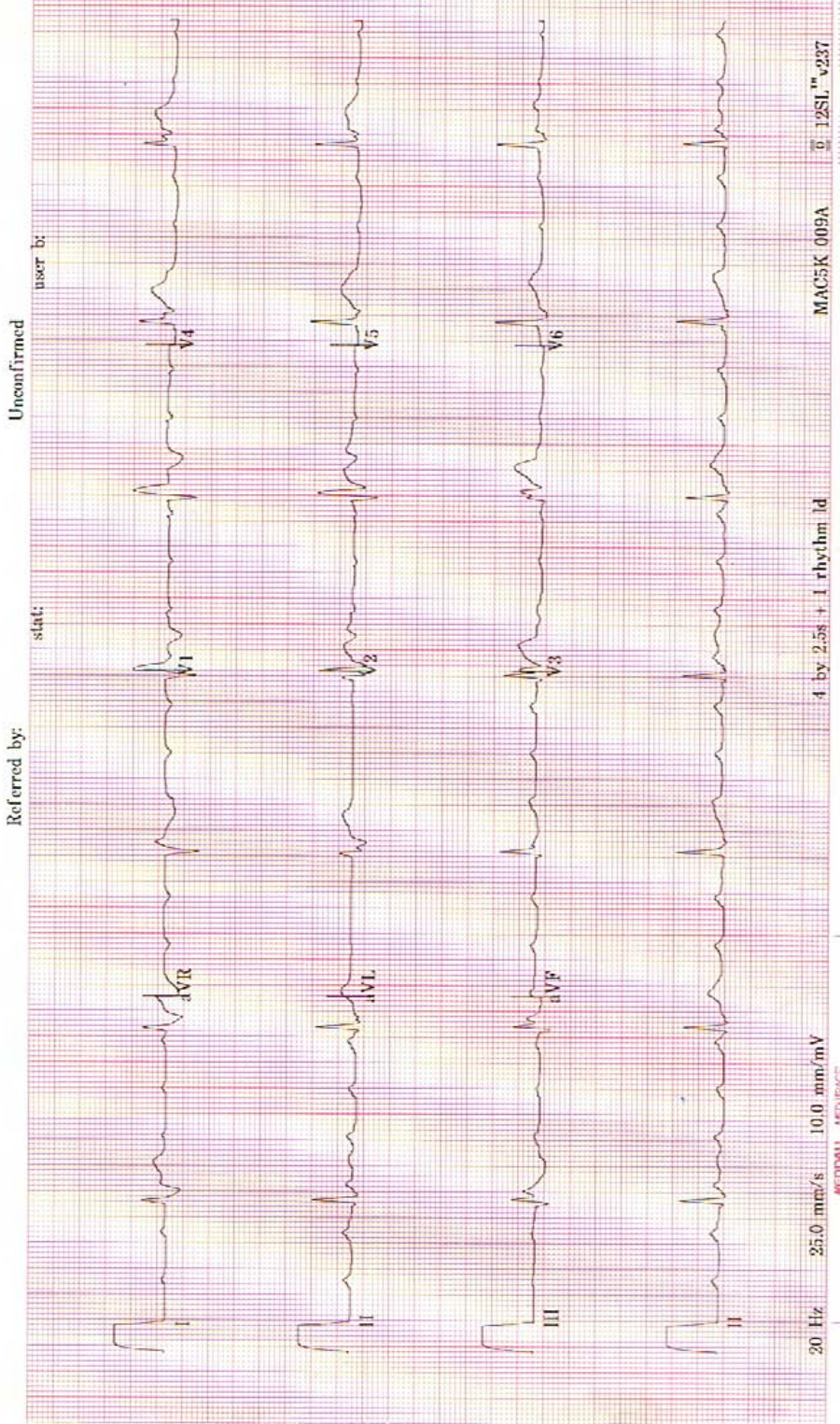
28y male presents to the ER with acute onset of crushing left sided chest pain associated with dizziness, shortness of breath and diaphoresis. Initially the patient was bradycardic, hypotensive, diaphoretic and somnolent. EKG revealed complete heart block and ST changes in anterolateral and inferior leads. Acute MI protocol was initiated and he was taken to cardiac cath lab. Of note, the patient had been seen the previous night in the ER and diagnosed with pneumonia by CXR. Patient had negative past medical, surgical and social history. In cath lab, patient found to have 100% occlusion of LAD artery as well as 100% occlusion of right coronary artery. Thrombectomy was performed with 8 stents and intra-aortic balloon pump placement. The patient was evaluated for hypercoagulable state. On PCR screen, patient was positive for nasal carriage of MRSA, but blood cultures were negative. The patient also positive for influenza A. Patient progressed with worsening hypoxia and was intubated. 3 days after his presentation, his heparin was stopped to place a chest tube. 20 minutes later he developed complete heart block again and was taken emergently to the cath lab, where he was found to have re-occlusion of both the right coronary artery and LAD artery. During cath, patient went into cardiac arrest and attempts at resuscitation were unsuccessful. Many unanswered questions still exist. First and foremost, what etiology did this patient have for occlusive heart disease? The possibility of coronary arteritis from an infectious etiology appears to be more plausible than atherosclerosis given the patient's age, risk factors, and extent of occlusion. If this was coronary arteritis, was it a direct result of the pathogen, or an indirect hypercoagulable effect. The patient was positive for MRSA through routine ICU PCR screening. Could evolution of community acquired MRSA be the direct cause, or induce a hypercoagulable state in susceptible patients? Might influenza alone or in combination with MRSA be the source of hypercoagulability. The fact that the patient catastrophically deteriorated after his heparin was abated temporarily for a surgical procedure supports a hypercoagulable theory.

Vent. rate 44 bpm
PR interval * ms
QRS duration 144 ms
QT/QTc 466/398 ms
P-R-T axes 60 73 19

28years
Male
Room: CC10
Loc: 10

Undetermined rhythm
Right bundle branch block
ST elevation consider anterolateral injury or acute infarct
** ** ACUTE MI ** **
Abnormal ECG

Technician: 127
Test ind: CP



R49) Ophthalmomyiasis: a rare cause of foreign body in the eye : Emine Akinci¹, Hatice Ozdemir¹, Figen Coskun¹, Hikmet Duymaz¹, Sebnem Bozkurt² : 1. Ankara Research and Training Hospital, Department of Emergency Medicine, Ankara, Turkey. 2. Istanbul Fatih Sultan Mehmet Training and Research Hospital, Istanbul, Turkey.

BACKGROUND: Evaluation of ocular pain in the ED requires a broad differential diagnosis to be considered. Besides clinical conditions causing red eye, several rare situations may cause ocular pain. **CASE:** A 79-year-old male presented to ER with left ocular pain. His past medical history was remarkable for a mass on his left eyelid which was diagnosed as basal cell carcinoma on biopsy two years ago. The patient stated that he had been recommended surgical therapy at that time, but he had refused treatment. He was a beekeeper and he had no systemic illnesses. On his physical examination his general status was good, he was oriented and cooperative. Ophthalmic examination of his left eye revealed edematous eyelids with a necrotic, gangrenous, ulcerated mass with hemorrhagic discharge and many moving larvae of 3-4 mm length on the medial canthus. Other system findings were normal. Laboratory examination showed WBC 11400/mm³, hemoglobin 10.2, erythrocyte sedimentation rate 23, blood glucose 176, other parameters were within normal limits. Computerized tomography of eye and brain showed a mass lesion at the level of left medial canthus that surrounds bulbus oculi causing indentation laterally and anteriorly and invading medial rectus muscle. Also increased soft tissue thickness and heterogeneity with air densities on the left preseptal region was observed. Ophthalmology was consulted for the patient. Wound debridement was performed and larvae were removed under local anesthesia. Hospitalization was recommended but the patient refused to stay in hospital, moreover he did not return for follow up.

DISCUSSION: Myiasis is infection with larvae of flies. Many kinds of flies can produce myiasis. Specific risk groups include immunocompromised patients, patients with open wounds, and patients with poor hygiene and history of animal contact. Larvae can be localized cutaneously, subcutaneously and intracavitary (nose, mouth, sinuses, ocular, vaginal, anal). Ophthalmic myiasis should be kept in mind in case of nonhealing chronic ophthalmic infections and foreign body sensation in the eye.

R50) Criteria for emergent ophthalmologist intervention necessity in patients with multiple traumas : Samad Shams vahdati¹, Solmaz Shoaahari², Payman Moharamzadeh¹, Rana Sorkhabi², Mona Alikhani¹, Mahboob Pouraghaei¹ : 1. Tabriz university of medical science, emergency department, Tabriz, Iran. 2. Tabriz university of medical science, ophthalmology department, Tabriz, Iran.

INTRODUCTION: The eye is one of the most significant and commonly injured areas in multiple trauma patients, especially those with severe head trauma. Ophthalmic injury can be vision threatening, and considering the emergency of determining priorities and curative interventions in such patients in the ED, the necessity of emergent ophthalmologic interventions in the above mentioned patients with simultaneous multiple organ injuries, is of great importance. Hence, determination of criteria on the basis of which an emergency

physician is enabled to determine the priority of an emergency ophthalmic intervention seems necessary. **METHODS:** All of the multiple trauma patients with ophthalmic trauma who had GCS 15 brought to the ED of Imam Reza Hospital from March of 2008 up to March of 2009 were studied. These cases first were examined on the basis of our previously determined criteria without slit lamp utilization. Afterward, they were examined by an ophthalmologist (with slit lamp examination) and the collected data were compared from the view point of ophthalmic trauma emergency. **RESULTS:** From March of 2008 up to March of 2009, 306 multiple trauma patients with eye trauma came to ED. Measure of agreement between emergency physicians and ophthalmologist diagnosis was very high (measure of agreement in kappa=0.967). **CONCLUSION:** The determination of emergency of ophthalmic trauma and the need for an emergent ophthalmologic intervention in multiple trauma patients with ophthalmic injury seems to be essential from the perspective of cost, time saving and decision making for treatment priorities for an emergency specialist. Our study showed that with the definition of some specific criteria in ophthalmic examinations without slit lamp, we can clarify the necessity of emergent ophthalmologist examination and intervention.

R51) A Case of Acute Keratoconjunctivitis from Exposure to Latex of Euphorbia Tirucalli (Pencil Cactus) :
Gil Shlamovitz¹, Malkeet Gupta², Jorge Diaz² : 1. Emergency Medicine, Windham Community Memorial Hospital, Willimantic, CT, USA. 2. Olive View - UCLA Medical Center, Sylmar, CA, USA.

CASE: We present a case of a 40-year-old man who suffered chemical eye injury from the latex of Euphorbia tirucalli (pencil cactus), resulting in acute keratoconjunctivitis.
DISCUSSION: The Euphorbia genus of plants contains numerous species widely distributed throughout all major continents, and therefore this may be a more common Emergency Department occurrence than previously thought.



Euphorbia Tirucalli (Pencil Cactus).

R52) Make or break: detecting child abuse in children aged under two years presenting to the Emergency Department : Peter Heinz¹, Sarah Armitage¹ : 1. Paediatric Emergency Department, Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom.

INTRODUCTION: Young children presenting to the Emergency Department (ED) with injury, poisoning or burns should be assessed with safeguarding issues in mind. The outcome of any assessment needs to be documented in the child's notes. Tools to help frontline staff detect inflicted injuries in the most vulnerable have been described and will be briefly appraised. A previous review identified poor documentation of child safeguarding concerns for children presenting with injury, burn, or poisoning to our ED. As a result a sticker was designed to be included on all ED cards for children under 2 in order to aid structured assessment and to improve documentation. **METHODS:** All ED cards for children under 2 with specified injuries in the period were identified. 45 children attending ED with injury, burn or poisoning in a 2 week period in October 2008 were assessed. 2 cards were not available so 43 cards were reviewed. **RESULTS:** See table 1 for diagnoses. The following standards were audited:

Standard 1: Every child should have a sticker on ED card; 23 out of 43 children had a sticker on their casualty card (53%). Standard 2: Each sticker should be complete and signed; 13 of the 23 stickers were not fully completed: 4 were blank; 6 were partially completed and 3 were completed but not signed. Standard 3: Concerns regarding inflicted injury should be recorded for each child; Of the 43 children 10 had documentation of consideration of inflicted injury (23%). Where safeguarding concerns were identified, these were dealt with appropriately. CONCLUSION: Use of the sticker has improved documentation of injury in children under 2 significantly. A previous audit before introduction of the sticker found that only 2% of physicians recorded concerns regarding possible inflicted injury in comparison to 23% in our study. Despite this improvement this tool still falls short of the required quality standard. However, through automation and education of staff further improvements in the efficacy of this tool are to be expected.

Tab 1

Mechanism of presenting complaint	Number	Percentage %
Head Injury	21	48
Facial Injury	6	14
Upper Limb Injury	4	9
Lower Limb Injury	6	14
Abdominal Injury	1	2
Burn	3	7
Poisoning	2	5

R53) The Frequency of Occult Bacteremia and Serious Bacterial Infection Among Children Aged 3 Months-3 Years with Fever : Hasan Yesilgac¹, Hayri Levent Yilmaz¹, Yasar Sertdemir¹, Deniz Hanta², Mehmet Turgut² : 1. Pediatric Emergency Medicine, Cukurova University Medical School, Adana, Turkey. 2. Numune Research Hospital, Adana, Turkey.

INTRODUCTION: The aim of the study was to determine the frequency and causes of occult bacteremia and serious bacterial infection among febrile Turkish children, without a focus of infection, aged 3 months to 3 years in the Cukurova region. METHODS: The patients 3 months-3 years of age admitted to the pediatric emergency department between November 2006-November 2007 with the complaint of tympanic fever 38,0°C, of whom origin of fever could not be found were included in the study. Blood samples of the patients who met the study conditions were obtained for complete blood counts, peripheral blood smears, CRP levels and blood cultures. RESULTS: Among 318 cases included in the study, 10 (3.1%) were diagnosed as serious bacterial infection: 4 (1.3%) had occult bacteremia, 2 (0.6%) had pneumonia, 2 (0.6%) had urinary tract infection, 1 (0.3%) had meningitis and 1 (0.3%) had bacterial enteritis. The bacteria S. Aureus, S. Pneumoniae and group B Streptococci were isolated occult bacteremia cases. In cases with bacteremia only, mean absolute neutrophil count was $11.646 \pm 1.405/\text{mm}^3$, mean CRP level was $82,1 \pm 31,7 \text{ mg/L}$, mean PMNL percentage was $75 \pm 5,8$, and mean band form percentage was $8,7 \pm 3,0$, all were elevated and statistically significant. Toxic granulation and fever lasting 3-7 days were statistically significant for occult bacteremia and

risk for serious bacterial infection, whilst sex, age and degree of fever were not. Only 4 of the 10 patients with serious bacterial infection had fever $\geq 39^{\circ}\text{C}$ and leucocyte count $\geq 15.000/\text{mm}^3$. CONCLUSIONS: Occult bacteremia and serious bacterial infection have to be considered as causes of fever in children 3 months-3 years of age with fever of unknown origin. The cases with leucocyte count $\geq 15.000/\text{mm}^3$, mean absolute neutrophil count $\geq 10.000/\text{mm}^3$ and percentage of neutrophils in the peripheral blood smear $\geq 70\%$ have high risk for serious bacterial infection.

R54) Involvement of the emergency physician in the resuscitation, stabilization and transport of neonates: particularities of the emergency system from Targu Mures, Romania : Simona Bratu¹, Puscas R. Maria¹ : 1. Emergency Department, Clinical Emergency County Hospital , Targu-Mures, Mures, Romania.

INTRODUCTION: Regionalization and progresses in NICU and cardiovascular surgery, have increased the need of transport of neonates and involved the emergency physician more in a new field. METHODS: Because the development plan in neonatal transport is still at the beginning in Romania, there are just three NICU ambulances, two helicopters and only one place where the emergency physician has taken the responsibility of transport, we decided to conduct a retrospective cohort study on a 321 neonates transported between January 2006 and December 2008 by this team. RESULTS: From 321 patients 71.33% (229) were transported with the NICU ambulance and 28.66% (92) with the helicopter. The majority of cases 63.43% (192) were transported from Mures County, the rest from other districts. From the variety of pathologies presented in the attached table, congenital heart diseases are the most challenging; present in 17.43% (56) neonates. The most frequent is TGV 41.42%, Ebstein and Fallot in 8.92% cases, with a higher incidence in boys; others like ASD, VSD, and PCA in 35.71% of cases, with a predominance in girls. We had 17.52% (17) treated with prostaglandin E1, 58.82% (10) of these were transported by air. Concerning endotracheal intubations, our implication was higher in NICU ambulance 73.01% (46 from total of 63); on the helicopter most of the patients were intubated before. From the total number of cardiac arrests 18 cases (5.6%), 8 (2.48%) were resuscitated with success, a higher incidence in the NICU ambulance (1.86%). CONCLUSIONS: The number of cases increased every year, together with the complexity of the maneuvers and clinical decisions of the emergency physician. All the recommendations of the ERC, AHA and AAP concerning neonatal care, can be applied in the pre-hospital setting. There is a continuous need to extend the number of transport facilities at a national level, together with training of the staff, in order to decrease the neonatal morbidity and mortality.

incidente of pathologies in the neonates transported

respiratory distress	177	55.14%
prematures	86	26.79%
congenital heart diseases	56	17.44%
intracranial bleeding	24	7.47%
meconium aspiration	14	4.36%
hypotermia	14	4.36%

sepsis	13	4.04%
hypoglicemia	5	1.55%
rh incompetence	3	0.93%
spina bifida	2	0.62%
supraventricular tahycardia	2	0.62%



R56) A Case for the Organization of International Pediatric Emergency Medicine : David M. Walker¹ : 1. Yale University School of Medicine, New Haven, CT, USA.

Due to unique anatomy, physiology and development, pediatric-specific conditions and the need for parental interactions, pediatric patients deserves special attention in the emergency department setting. They are best served by a practitioner who is well-versed in the recognition and treatment of acute illnesses and injuries in this population. Internationally, there is wide variation in the context and quality of emergency care for children. One way that infrastructure

needs are being addressed is through international partnerships. These partnerships often exist in isolation, leading to missed opportunities for collaboration or improvements on a larger scale. International pediatric emergency medicine (IPEM) is an emerging academic field whose practitioners are committed to international collaboration aimed at improving the quality of emergency care for children globally. As an organization, it can define the scope and status of pediatric emergency medicine (PEM) clinical practice and identify its stakeholders. Coordination of educational, clinical and research activities will be optimized. Another goal is the maintenance and dissemination of best practices in the delivery of PEM worldwide. IPEM practitioners have a role in the spread of PEM and in the development of local and international policies that address challenges related to access and improvement in pediatric emergency care. Additionally, they will advocate for improved attention to pediatric victims of humanitarian emergencies. Pediatric emergency care consists of many components including access to care, pre- and inter-hospital transport, pediatric specific triage and clinical guidelines, care of children during complex emergencies. While there are many recent advances, there still exist many barriers to the improvement in its quality. Barriers to quality care are different in each situation and in each part of the world, with the implication to the astute IPEM practitioner that solutions must be targeted to the local context of health care within a given environment. One first step to overcoming PEM practiced in isolation is a formal organization of the field of IPEM.

R57) Do non-specific abdominal pain and transient synovitis have a common infective origin? : Angela Lucas-Herald¹, Tom F. Beattie², Katherina Kastrissianakis² : 1. University of Edinburgh, Edinburgh , United Kingdom. 2. Royal Hospital for Sick Children, Edinburgh, United Kingdom.

INTRODUCTION: The aetiology of transient synovitis (TS) has long been suspected to be infective in origin. No single virus has been implicated. Similarly, non-specific abdominal pain (NSAP) is a common complaint in childhood. We present data which suggests a link between both. **METHODS:** As part of a separate study we used children with NSAP and fractures as controls to study TS. 44 children with TS and 33 with NSAP were studied. Parents/guardians of children presenting acutely or shortly after initial attendance were questioned using a structured proforma, which requested details of all infective symptoms in the 4 weeks prior to attendance. **RESULTS:** Once the data were analyzed it became clear that previous history of symptoms suggestive of infection was similar in both groups (Table 1). These results show that there is no significant difference between most reported symptoms except runny nose and vomiting. These are also associated with viral illness. **CONCLUSION:** This raises the intriguing possibility that both TS and NSAP are different manifestations of the same infective process. The question therefore arises whether this is serendipitous and should be followed further or whether this is simply a case of too much data? Are the numbers too small? This relationship is worthy of further study.

P values for each symptom

Symptom	Fishers exact test P value
Runny nose	P<0.001(sig)

Stuffy nose	P=0.2 (ns)
Sore throat	P = 0.28 (ns)
Cough	P= 0.5 (ns)
Earache	P=0.29 (ns)
Runny eyes	P=0.7 (ns)
Rash	P=0.7 (ns)
Vomiting	P<0.08 (sig)
Diarrhoea	P=0.2 (ns)
Fever	P=0.6 (ns)

R58) Ultrasound evaluation for appendicitis in children: Can we safely reduce CT scan utilization? : Suzanne Bentley¹, Bret P. Nelson¹, Lisa Zahn¹ : 1. Emergency Medicine, Mount Sinai School of Medicine, New York, NY, USA.

INTRODUCTION: Appendicitis is the most common pediatric condition requiring emergency surgery. Although CT scan is the most accurate diagnostic modality for this illness, the risks of radiation exposure are not ideal. This study assessed the impact of a radiology department protocol to increase the use of ultrasound (US) over CT scan in the initial evaluation of suspected pediatric appendicitis. **METHODS:** Retrospective chart review of pediatric emergency department patients undergoing evaluation of appendicitis. Charts before and after the implementation of the ultrasound protocol (where US was used as the initial imaging modality whenever possible) were reviewed. Patient demographics, CT and US results were recorded for each group. T-test and test characteristics with 95% confidence intervals (CI) were calculated. The gold standard for appendicitis was pathology report; for negative evaluations, return visits for appendicitis within one week of evaluation were used. **RESULTS:** Sixty-two patients underwent radiographic evaluation for appendicitis before and fifty-two after the ultrasound protocol was established. Mean age was 13.7 years before and 12.1 years after. There were 15 cases of appendicitis before (24.2%) and 19 cases after (36.5%; $p = 0.016$). There was a significant reduction in the use of CT scan (75.8% to 44.2%, $p=0.0005$) and increase in the use of ultrasound (33.8% to 78.8%, $p<0.05$) after the ultrasound protocol was implemented. For US, the false negative rate was 0.05 (95% CI 0.002-0.26) before and 0.07 (95% CI 0.01-0.24) after. There were no false positive ultrasounds in either group. Overall length of stay was shorter for patients evaluated by US alone vs. CT alone (mean 5 hrs 19 min vs. 7 hrs 16 min, $p <0.005$). **CONCLUSIONS:** Implementing a protocol to increase the use of ultrasound in assessing pediatric appendicitis reduced the number of CT scans performed without increasing the rate of false negative or false positive evaluations. Thus, the radiation exposure was reduced without compromising diagnostic efficacy.

R59) PROGNOSTIC INDICATORS OF PEDIATRIC NEAR DROWNING IN SAUDI ARABIA : Nadeem U. Qureshi¹ : 1. Emergency Medicine, King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia.

INTRODUCTION: Near drowning is a common occurrence with devastating outcomes, death or survival in a permanent vegetative state. Multiple factors have been associated with poor outcome. These include duration of submersion more than 10 minutes, resuscitation duration more than 25 minutes, hypothermia with core temperature less than 33 °C (92°F), Glasgow coma scale less than 5 (comatose), age less than 3 yrs, arterial blood ph less than 7.1 upon presentation, and blood glucose more than 10 mmol/dl. The objective of this study was to identify associations of various factors with different neurological outcomes in near drowning victims. **METHODS:** Retrospective study of 31 pediatric patients admitted to King Abdulaziz Medical City over 7 years to find correlations between good and poor neurological outcomes of near drowning patients. We evaluated the following factors: age, sex, prehospital resuscitation, location and duration of drowning, hospital resuscitation, Glasgow coma scale, blood ph, initial blood sugar, pupil reaction to light. Outcome was defined as good if the patient survived with no neurological sequale and poor if there was death or severe neurological damage. **RESULTS:** A total of 31 patients were enrolled in the study. Good outcomes were noted in 48% (15 patients) and poor outcome in 52% (16 patients). Factors associated with good outcomes included prehospital CPR, GCS more than 9, presence of papillary response to light, ph >7 and initial blood sugar <10 mmol/dl. No statistically significant association was seen between age, sex, location of drowning, or submersion time relating to neurological outcomes. **CONCLUSION:** These variables may provide a valuable tool to guide the extent of resuscitation and medical treatment for near drowning patients. These factors may also provide vital information regarding functional survival post resuscitation.

R61) PAEDIATRIC BURNS AND SCALDS IN THE ED – ARE WE ASKING THE RIGHT QUESTIONS? : Michael Quirke¹, Mary McKay¹ : 1. Childrens University Hospital, Temple Street Dublin, Dublin, Ireland.

INTRODUCTION: **AIM:** To assess if doctors working in a dedicated paediatric emergency department adequately document and consider non accidental injury (NAI) as a cause of burns or scalds in their patients, and whether the introduction of a specific burns and scalds proforma results in better documentation and higher rates of NAI detection. **METHODS:** The case notes of 50 patients who attended the ED with a scald or burn were reviewed against a 25 question proforma. The same proforma was used prospectively with 50 further patients. **RESULTS:** Demographic characteristics of both groups were similar. There was a statistically significant increase in the rate of documentation of the following: whether the child was previously registered on the CPR, whether the event was witnessed, specific time of the injury, where the injury occurred, administration of first aid, presence of other injuries, TBSA affected, a pictorial representation of the injury, developmental level of the child and compatibility of history with this. 1 patient from each group was referred for assessment of possible NAI. **CONCLUSION:** Documentation of the possibility of NAI was poor. The use of a proforma ensures that the pertinent questions are asked and improves documentation of the possibility of NAI.

R62) Can Cytokines Identify Serious Bacterial Infection in Febrile Children? : Osman G. Osman¹, Paula Midgley¹, Thomas F. Beattie¹, Donald C. Brown¹ : 1. Royal Hospital for Sick Children, Edinburgh, United

Kingdom.

INTRODUCTION: Serious bacterial infection (SBI) continues to occur with high frequency among young children with fever attending Emergency Departments. Clinical uncertainty during the evaluation of these children, and controversy regarding their management, prevail. Clinical assessment alone does not identify SBI. Laboratory tests traditionally used as aides in the evaluation of unexplained fever, for example leucocyte counts (WBC), C Reactive Protein (CRP) and Erythrocyte Sedimentation Rate (ESR) do not accurately differentiate invasive bacterial disease from more benign illness. There is currently no laboratory test, for which results can be obtained rapidly, that reliably identifies those children at high risk of having SBI. Cytokines are key players in the immune and inflammatory response to infection and induce the acute phase response upon which traditional tests are based. They could therefore be expected to more accurately predict SBI. **METHODS:** We prospectively studied an unselected population of young children with fever attending a paediatric Emergency Department to examine the usefulness of three cytokines, interleukin-6 (IL-6), interleukin-8 (IL-8) and soluble intercellular adhesion molecule-1 (sICAM-1) in identifying SBI. A control group of demographically comparable children who did not have acute illness was selected from outpatient clinics. The performance characteristics of the cytokines in predicting SBI were compared to those of the traditional tests (WBC, CRP and ESR). **RESULTS:** 26.7% of 618 patients had SBI and 2.7% had bacteraemia. 40% of positive blood cultures were from patients sent home with an apparently benign illness. Serum IL-6 was highly elevated in all patients with meningitis and IL-8 was elevated in all patients with bacteraemia or meningitis. The modest gain in post-test probability of SBI was comparable between the cytokines and traditional tests. A model based on the respiratory rate, CRP and sICAM-1 correctly identified 70% of SBI. **CONCLUSION:** IL-6 and IL-8 appear to be sensitive markers for bacteraemia and meningitis and their role requires further evaluation.

R63) The Prevalence of Serious Bacterial Infection in Children Attending a Paediatric Emergency Department : Osman G. Osman¹, Thomas F. Beattie¹, Paula Midgley¹, Donald C. Brown¹ : 1. Royal Hospital for Sick Children, Edinburgh, United Kingdom.

INTRODUCTION: The prevalence, and hence the management, of serious bacterial infection (SBI) in young febrile children continues to change with the introduction of effective immunisation. Knowing the local prevalence of SBI is essential in formulating management strategies as extrapolation from studies elsewhere may be inappropriate. We studied the prevalence of SBI in young febrile children attending the Emergency Department (ED) of the Edinburgh Royal Hospital for Sick Children. **METHODS:** Data were prospectively collected over one year for children less than six years old who attended the ED with a temperature of 38.5°C or greater. **RESULTS:** 618 children fulfilled the study criteria. 342 patients were male. The median age was 19.3 months (range 0.3-71.8). 165 (26.7%) of the children studied had SBI. Twelve blood cultures grew pathogenic organisms. 2.7% of patients had bacteraemia, the majority caused by organisms which the children had not been immunized against. A significant proportion of bacteraemic illness was diagnosed after discharge from hospital. Three patients had meningitis, and 39 had urinary tract infection. The remainder of diagnoses

included pneumonia, enteritis and soft tissue infection. CONCLUSION: The management of young febrile children should continue to involve investigation including blood culture and close follow-up.

R64) Resistance patterns of commonly used antibiotics among pathogens of community-acquired urinary tract infection among febrile young children in a pediatric emergency department : Chang-Teng Wu¹ : 1. Chang Gung Children Hospital, Kwei-Shan, Taoyuan, Taiwan.

INTRODUCTION: The true incidence of urinary tract infection (UTI) in febrile young children (<3 years old) is difficult to estimate, particularly because those with UTI may only have fever and no specific urinary tract symptoms or signs. This study was performed to determine the prevalence rate of UTI in febrile young children and the distribution and antibiotic susceptibility patterns of bacterial strains isolated from these patients with community-acquired urinary tract infections (UTIs) at a teaching hospital in northern Taiwan. METHODS: From January 2008 to December 2008, urinary isolates from suspected cases of UTI in febrile young children from 1 day to 36 months old attending the Pediatric Emergency Department of Chang Gung Children's Hospital in Taiwan were identified by conventional methods. RESULTS: In total, 5470 (78%) of 7009 eligible patients were enrolled in this study, and 619 (11.3%) had a diagnosis of UTI. Urine samples showed growth of pathogens among which the most prevalent was *Escherichia coli* (69.9%) followed by *Klebsiella* spp. (8.3%). The majority (53.5%) of the isolates were from males. Boys less than 1 year old had a higher rate of UTI (14%) compared to girls (10.3%). Girls older than 1 year old had a higher rate than boys. The gram-negative enteric bacilli showed high prevalence of resistance to ampicillin, piperacillin, and trimethoprim-sulfamethoxazole (TMP-SMX). Younger children (<1 year old) with UTI showed increased sensitivity to cefazolin and gentamicin, while older children were more resistant to ampicillin. CONCLUSIONS: The overall rate of UTI in this study was higher than in previous reports. *E. coli* was the predominant bacterial pathogen associated with community-acquired UTI, and also showed increasing resistance to ampicillin, piperacillin, and TMP-SMX and produced extended spectrum β -lactamase among UTI pathogens. Resistance to cefazolin and gentamicin increased in older patients. The results of this study will be useful for pediatric emergency doctors to improve empirical treatment.

R65) A guideline for antibiotic therapy in paediatric sepsis of unknown origin : Marie-Clare Harris¹, Thomas F. Beattie¹ : 1. Royal Hospital for Sick Children, Edinburgh, United Kingdom.

INTRODUCTION: The recognition and treatment of sepsis has come under scrutiny recently with the 'surviving sepsis' campaign and the drive towards early goal-directed antibiotic treatment. In the paediatric population the source of infection is not always immediately apparent, despite the risk of serious, life-threatening invasive sepsis. We have devised guidelines for the initiation of empirical antibiotic therapy in sepsis of uncertain origin. METHODS and RESULTS: We are based in a tertiary paediatric centre which is the sole paediatric hospital serving a catchment of 130,000 children aged < 13 years of age. 38,000 new patients aged < 13 attend each year. Of these 40% are in the pre-school age group. The key issues addressed were: 1) Maintaining an up to date guideline in the face of changing

epidemiology, due largely to vaccination programmes against Haemophilus influenza B, Neisseria meningitides C and the recent selective Streptococcus pneumonia programme; 2) Age-specific pattern of infection and susceptibility to infection; 3) Early administration of appropriate and effective broad spectrum antibiotics in the absence of localising signs; 4) Simplifying prescribing for junior medical staff in a critical care scenario; 5) Local culture results and resistance patterns. CONCLUSIONS: The policy pre-supposes that all children with suspected sepsis will be investigated appropriately and urgently prior to antibiotic administration. All septic neonates and infants should have a lumbar puncture carried out as should any child who has suspected CNS infection. Any child with symptoms suggestive of HSV encephalitis should also receive intravenous acyclovir.

Age group	Common pathogens	Antibiotics (All intravenously)
Neonates (<28 days)	Strep. Agalactiae, E. coli, Listeria, Staph, Enterococcus and gram negative species	benzylpenicillin 50mg/kg & gentamicin 5mg/kg
Infants (28 days to 3 months)	Strep. pneumoniae, Neisseria meningitides, Strep. pyogenes	cefotaxime 50mg/kg
Children >3 months	Strep. Pneumoniae, neisseria meningitides, strep. Pyogenes	ceftriaxone 80mg/kg
Immunocompromised patients		meropenem 20 mg/kg

R66) Can we rationalise out-patient antibiotic prescribing in paediatric emergency medicine? : Marie-Clare Harris¹, Thomas F. Beattie¹ : 1. Royal Hospital for Sick Children, Edinburgh, Scotland, United Kingdom.

INTRODUCTION: Concern over multiply resistant bacteria becoming more prevalent has led to calls for “better” use of anti-microbial therapy. This poster presents our attempts to rationalise our antibiotic prescribing for take-home medication for children who are fit for home treatment and who will be discharged from our Emergency department (ED). The ED has particular issues in that the majority of juniors are transient, often have little experience of prescribing de novo and often base treatment on inpatient guidelines (internal audit).

METHODS and RESULTS: We work in a tertiary paediatric unit serving a paediatric population of 130,000 children aged <13. It is the only paediatric ED for the area and sees children up to their 13th birthday. Several factors were analysed but the following were considered to be those having the most significant impact: 1) Analysis of organisms cultured from ED by diagnosis; 2) Local sensitivity and resistance patterns for these organisms; 3) Compliance eg taste (Liquid flucloxacillin); 4) Existing guidelines for antibiotic prescribing (eg

SIGN for Otitis media, Tonsillitis); 5) Cost effectiveness – cheap does not mean effective if not used; shelf-life of reconstituted drug (eg penicillin V has shelf-life 7 days but often 10 days required). The results of our analysis feature in Tables I

And 2. CONCLUSIONS: We have been able to rationalise our antibiotics for out-patient treatment. The next step is to analyse compliance, antibiotic prescribing patterns with previous years and usefulness for juniors.

indications for antimicrobial therapy

diagnosis	pathogens	comments
Otitis media	Viral, strep pneumoniae, h.flu	Antibiotics not indicated unless toxic appearance
Tonsillitis	Viral, strep. pyogenes	Antibiotics indicated in severe cases only
UTI	e.coli. proteus, s.saphrophyticus	For recurrent UTIs seek advice
LRTI	Viral, strep pneumoniae, h.flu	Admit if respiratory distress or xray changes
Balanitis	s. aureus, s. pyogenes	
Soft tissue/skin	s.pyogenes, h.flu, s. aureus, s pneumoniae	Admit for iv treatment if toxic or orbital involvement
Dental abscess	Mixed anaerobes	All require dental follow up

antibiotic agents for out-patient prescribing

diagnosis	1st line agent	2nd line agent
otitis media	amoxicillin	clarithromycin
tonsillitis	cefalexin	clarithromycin
UTI	trimethoprim	co-amoxiclav
LRTI	amoxicillin	clarithromycin
balanitis	co-amoxiclav	clarithromycin
soft tissue/skin	co-amoxiclav	clarithromycin

dental	co-amoxiclav	metronidazole
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R67) Childhood arterial ischemic stroke: a case report at the emergency department and review of the literature. : Stephanie Lebergue¹, Eric Revue¹, Nathalie Flacke¹ : 1. Victor Jousselin's hospital, Prehospital and Emergency Department , Dreux, France.

BACKGROUND: Arterial ischemic stroke (AIS) is relatively rare in children. The emergency physician (EP) should think about this diagnosis in order not to delay the care needed in that pathology with serious sequela. **CASE:** An eleven-year-old girl was admitted to the emergency department for vomiting, motor weakness and facial paralysis. The cerebral CT scan revealed cerebellar and left vermis hypodensities. Six hours after her admission, she suddenly suffered from seizures. The cerebral MRI showed ischemia in the vertebro-basilar area. The child was then transferred in a pediatric intensive care unit where thrombolysis was debated and finally abandoned. Heparin therapy was instituted. The second cerebral MRI revealed an important ischemia of the brain stem. The neurologic status worsened and was progressive and the child died fourteen days later. **DISCUSSION:** Incidence of pediatric AIS is 5 cases per 100000 children per year. Etiologies are many, but heart diseases remain the most common cause of stroke. The most frequent symptoms are hemiparesis, acute hemiplegia, seizures, aphasia or dysphasia and altered level of consciousness. Acutely, a cerebral CT scan is necessary to rule out a differential diagnosis but the cerebral MRI remains the most sensitive procedure to confirm the AIS. Other vascular imagings may be necessary. Cardiac check-up and laboratory evaluation should also be performed. Treatment consists of supportive care, antithrombotic agents (acetylsalicylic acid, heparin and vitamin K antagonist) and thrombolytic therapy. **Conclusion:** Confronted with neurologic symptoms in a child, the EP should keep in mind the possibility of an AIS to avoid delays in the management of that cerebral disorder and to limit the sequelae. The CT scan should be completed with a cerebral MRI. The transfer to a pediatric department specialized in cerebrovascular disorders is then necessary to carry on the management and to begin the rehabilitation. Continued research is imperative to improve therapy.

R68) How can we improve urgent/emergency IV cannulation in children? : Angela Lucas-Herald¹, Tom F. Beattie², Paul McGarry² : 1. University of Edinburgh, Edinburgh , United Kingdom. 2. Royal Hospital for Sick Children, Edinburgh, United Kingdom.

INTRODUCTION: IV cannulation in paediatrics can often be a very difficult and stressful procedure for all those involved. There is currently very little evidence in the medical literature regarding reasons for success or failure of IV cannulation in children. **Objectives:** To identify reasons for success or failure of IV cannulation in children in the emergency setting. **METHODS:** Design and setting: A prospective study in a tertiary children's hospital Emergency Department. Population: All children attending the Emergency Department (ED) who required IV cannulation were eligible for this study. Protocol: All staff working within the ED were asked to complete a one-page questionnaire after attempted IV cannulation. This gathered details of age, gender, weight, grade of healthcare professional and years of experience in paediatrics, location and reason for cannulation, size and bore of needle used, use

of local anaesthetic, assistance during cannulation and potential reasons for success or failure of the procedure. A successful cannulation was considered to be one in which it was possible to instill normal saline through the secured cannula. **RESULTS:** 192 questionnaires were analysed. The median age of the patient was 36 months. Overall success rate after 1 attempt was 69%. 24% of patients required 2 attempts. 78% of attempts with the use of local anaesthetic were successful compared to 59% of attempts without local anaesthetic. Success rate for staff with less than 6 months paediatric experience was 49%, compared to a success rate of 80% in staff with more than 6 months paediatric experience. Success rate with parents present was 69%, compared with 87% in those attempts without parent present. Main reasons cited for success were good veins, cooperative child and good assistance. **CONCLUSION:** The most important factors in successful paediatric IV cannulation are experience of the staff involved and the use of topical anaesthetic. Other factors may however affect efficacy of cannulation. Further research is required.

R69) Analysis of paediatric management care in a pre hospital emergency service : Amira Jaafar¹, Hajer Belakhdar¹, Abdelaziz Zouari¹, Sana Dridi¹, Slim Jedidi¹, Sonia Karma¹, Mounir Daghfous¹ : 1. SAMU 01 of Tunis, Tunisia.

INTRODUCTION: Paediatric transport constitutes a significant part of the activity of our pre hospital emergency service. This transport poses the problem of specificity of the paediatric treatment of distress and its relevance to the material available and the training of medical intervention. The aim of our study was to analyze the transports carried out by the paediatric intervention team in the year 2008. **METHODS:** This is a retrospective study from sheets regulation of SAMU 01 coded "Paediatrics" (0 to 14 years). We have selected the following parameters: age, primary or secondary nature of transportation and outpatient therapeutic index to assess the burden of care that these patients required. The results were reported in an Excel sheet. **RESULTS:** During the period from 1 January 2008 to 31 December 2008, the number of pediatric transports was 277. The breakdown by age group was 10% for newborns, 21% for less than 1 year, 26% of 1 to 5 years and the remaining 5 to 14 years. These transports were primary in 62% of cases dominated by the AVP and secondary in 48% of cases. The secondary transfer of neonatal cases was 24 for one year. The average outpatient therapeutic index was 7.25 ± 3.7 . **CONCLUSION:** Paediatric transport is accompanied by a high therapeutic index outpatients requiring specific training for teams of transport. This fact has imposed the individualisation of a mobile paediatric intensive care unit with all the right equipment. Special training for doctors and paramedics staff is planned to enable them to manage paediatric transport safely.

R70) Media Influence on Physician Behavior in the Evaluation of Pediatric Head Trauma : Elizabeth Haines¹, Christina Campo¹, Brian Walsh¹, John R. Allegra¹ : 1. Morristown Memorial Hospital, Morristown, NJ, USA.

INTRODUCTION: On March 18, 2009, there was a well-publicized celebrity death due to head trauma. After that tragedy, there appeared to be an increase in the number of children presenting with head trauma. We sought to determine if the publicity caused emergency

department (ED) physicians to change their practice for ordering head CT scans. **METHODS:** Design: Retrospective chart review. Setting: The pediatric ED of a tertiary care hospital. Protocol: Using ICD-9 codes, we identified consecutive patients under 18 years old who presented with head trauma during the month of March. A priori, we chose to compare visits with head trauma for the 10 days before and after March 18. Individual ED charts were reviewed to determine the rates of head CTs that were obtained and the disposition of patients before and after March 18. Student T-test and Chi-square test with alpha set at 0.05 were used to determine statistical significance. **RESULTS:** In the 10 days before and after March 18, a total of 127 pediatric patients presented with head trauma; 42 patients before and 85 patients after ($p < 0.01$). The groups were similar with respect to age, gender, and percent admitted to the hospital. Before the tragedy, the percent of patients that received head CTs was 26% and afterward it was 22%. $P = 0.63$.

CONCLUSION: The increased media attention about head trauma and the associated large increase in the number of pediatric patients presenting to the ED did not result in a change in the percent of patients who received CT scans of the head. We speculate that the media had little impact on physician behavior. Alternatively, there have been more lower-acuity patients presenting to the ED after March 18. If this was true, an equivalent proportion of CTs ordered could be interpreted as physician ordering scans on patients that would not have gotten them before the tragedy.

R71) Attention For The Overdose Of Methylphenidate In Teenage Girls : Sabiha Sahin¹ : 1. Pediatric, ESOGU, Eskisehir, Turkey.

INTRODUCTION: Methylphenidate (MPH) is a central nervous system stimulant drug that has become the primary drug of choice in treating Attention Deficit Hyperactivity Disorder in children. As there is an increasing number of patients receiving MPH and the increased availability of MPH; there is an increased potential for this medication to be abused. MPH is used orally, intranasally or intravenously for abuse. As well known, pharmacologic properties of MPH are the same as those of amphetamine and cocaine. In this report, we analysed children who were poisoned with MPH as a single agent retrospectively. **METHODS:** During 1st Jan-31st Dec 2008, in a pediatric emergency department (ED) of a university hospital, 28 patients were included. Age, sex, mental status at arrival to ED, Glasgow Coma Scale score (GCS), complete blood count (CBC), arterial blood gas analyses, psychiatric symptoms and time interval from arrival to discharge were recorded. **RESULTS:** Patients' mean age was 10.45 (1.5-17) 19 of the patients were female. 16 of the patients were intentionally poisoned. They were all older than 10 years old and 12 of them were female. Of 12 unintentionally poisoned patients, all were younger than 10 years old, 5 were female. MPH (Ritalin, Risperdal, etc.) were recommended by pediatric psychiatrists to all the patients. The mean time between ingestion of MPH and arrival to the ED was 3.8 hours. Symptoms were altered mental status (GCS score < 13 in 15 cases), convulsions, psychiatric symptoms such as hallucinations, disorientation, delirium (15 patients), vomiting (5 patients), and witnessed ingestion (3 patients). CBC, electrolytes, renal and liver function tests were normal in all patients. Gastric lavage and charcoal, were applied to all patients. Patients were followed in critical care unit for 24-72 hours and mean hospitalisation time was 52 hours. One patient stayed in hospital for 7 days. All patients were re-examined 2 weeks after discharge and no pathological signs and

symptoms were recorded. Mortality rate was 0%. CONCLUSION: Prevention of MPH abuse needs to be a shared responsibility between the pediatric psychiatrists, the parents and patients.

R72) Assessing the Difference for Non-Urgent Pediatric Emergency Department Visits Between Health Care Providers and Care Givers : Roy M. Vega¹, Olufunmilayo Funmi¹, Joselyn Salvador¹ : 1. Emergency Medicine, Bronx Lebanon Hospital Center, Bronx, NY, USA.

INTRODUCTION: To date, no research has studied reasons for Pediatric non urgent (NU) ED visits from 3 perspectives concurrently: parents/care givers (CGs), Primary Care Pediatricians (PCPs) and ED personnel (EDP). This study compares perceived reasons for NU ED use among these 3 groups. **METHODS:** A cross-sectional survey gathered data using anonymous self administered questionnaires given to EDPs, PCPs and CGs regarding NU ED use. The CGs of children triaged category 4 and 5 received questionnaires. The questionnaires were available in English, Spanish and French translations. The study was approved by the hospital's Internal Review Board. Study data were analyzed using SPSS. **RESULTS:** The EDPs and PCPs did not differ by gender or years of working experience. Among CGs 42.5% had 1 child, 25.5% had more than 3 children. The most common patient age range was 2 to 5yrs. On comparing the reasons for NU ED visits across groups, only EDPs deemed inability to make timely appointments with PCPs an extremely important reason. EDPs and PCPs, not CGs, considered living near an ED to be an important reason for NU ED visits. Only CGs considered receipt of attention as a very important reason. EDPs and PCPs both perceived lack of CGs health education to be the most important reason for NU ED use. The availability of a wide range of diagnostic tests in the ED was important to all 3 groups. A significantly larger proportion of EDPs and PCPs than CGs attributed the problem of NU ED visits to the CGs, with about 70% recommending CG education and approximately 30% recommending a penalty system as a solution. By contrast, CGs generally attributed NU ED visits to the system, advocating for more PCPs with longer working hours and more EDs. **CONCLUSION:** Despite areas of agreement in the perception of the reasons for NU ED visits among EDPs, PCPs and CGs, there are some notable differences. These findings underscore the need to foster understanding among these stakeholders and to intervene in the most prevalent reasons for NU ED visits.

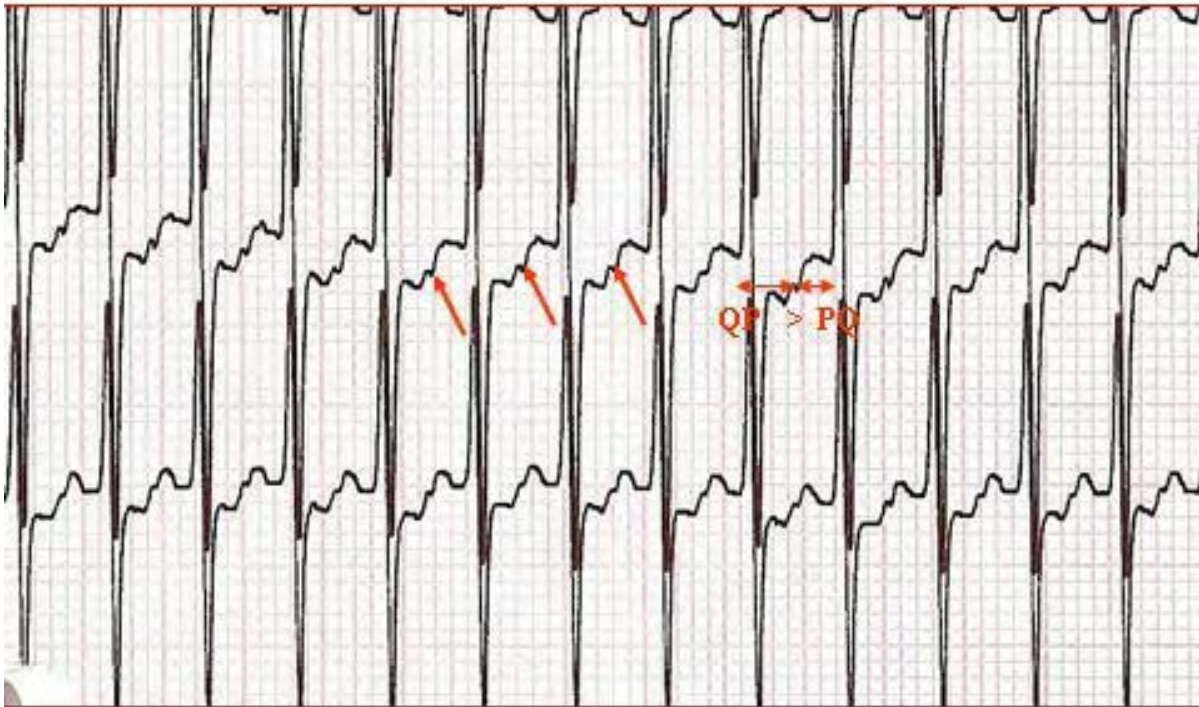
R73) Cardiogenic Shock due to Persistent Junctional Reciprocating Tachycardia (PJRT) Presenting in the Emergency Room in a 24 days Old Newborn.

: Evie Barbe¹, Karel Vandeveld¹, Wim Decaluwe¹ : 1. Sint Jan Hospital, Bruges, Belgium.

BACKGROUND: Supraventricular tachycardia is the most common pediatric arrhythmia. We report a 24-days-old neonate admitted to the emergency room in circulatory failure due to PJRT, an incessant accessory pathway-mediated re-entry tachycardia. **CASE:** A 24-days-old neonate presented to the emergency department with poor feeding for 3 days, respiratory failure with cyanosis, pallor, reduced capillary refill and a heart rate of 220 bpm. The first hypothesis on admission was septic shock. He was treated with oxygen, fluid therapy and antibiotics. Due to persistent shock, he was intubated. Five minutes later, the heart rate fell

abruptly from 220bpm to 130bpm, revealing supraventricular tachycardia as the cause of the shock syndrome. An ECG during tachycardia was characteristic for PJRT: PQ-interval shorter than QP-interval and negative P-waves in the inferior leads (Fig 1). An echocardiography showed a severely impaired left ventricular function, with mitral valve and tricuspid valve regurgitation grade 3.

Relapses of tachycardia were treated with vagal maneuvers, adenosine and DC shock but sinus rhythm could only be sustained for a short period. After a few hours of incessant tachycardia, IV amiodarone was administered slowly, restoring sinus rhythm, a few hours later. However, shortly after, electromechanical dissociation, bradycardia and cardiac arrest followed. CPR was started and continuous epinephrine was needed to restore cardiac output. 10 days after admission, the patient left the hospital on oral amiodarone. DISCUSSION: Due to slow conduction properties of the accessory pathway, tachycardia in PJRT tends to be incessant, causing cardiac failure. The heart rate in PJRT may be only slightly higher than the physiological maximum heart rate for age, making the recognition of this arrhythmia difficult. Furthermore, PJRT is a challenging entity to treat. IV amiodarone is considered to be effective and safe for treating life-threatening arrhythmias but can cause severe cardiac suppression.



PJRT-characteristics: negative P-waves in inferior leads V4-V5-V6 and $QP > PQ$

R74) Major Paediatric Trauma in a Scottish Region : Alexis Leal¹, Lisa Carter¹, Keith Jacques¹, Tom Beattie¹ : 1. Emergency Department, Royal Hospital for Sick Children, Edinburgh, United Kingdom.

INTRODUCTION: There have been few regional studies in the UK looking at the pattern and volume of significant paediatric trauma. The purpose of this study is to critically examine the extent of major paediatric trauma presenting to a regional centre. **METHODS:** Setting - Tertiary Children's Hospital with an average annual attendance of 37,000 new patients under 13 years of age. Patient/Methods - A retrospective chart review was undertaken from the notes of all children under 13 years of age admitted following major trauma. Major trauma was defined as injury requiring admission for at least 72 hours or death at any stage. Isolated limb injury was excluded. Data was collected for each stage of the patient journey. Details recorded included patient demographics, mechanism of injury, injury sustained, need for surgery and outcome. **RESULTS:** 251 eligible children have been entered into the database. There is a male:female ratio of approx 2:1. The median age is 47 months (Interquartile Range [IQR] 19, 95 months). 128 patients presented following burns, 58 following road traffic accidents, 33 following falls, 15 following presumed NAI/assaults and 16 with other mechanisms of injury. Of those 123 children without thermal injury, head and orthopaedic injuries predominate as the cause of major trauma/injury. Median length of stay 9 days (IQR 6, 14). Major paediatric trauma and injury is uncommon with an overall incidence of 4/100,000 of the population. There were 4 fatalities during the study period - all due to significant head injuries. **CONCLUSION:** We demonstrated that major trauma is relatively rare with thermal injuries identified as the major cause. This data will help inform trauma training and service needs for the future.

R75) Pheochromocytoma in a fifteen year old girl presenting with acute cardiogenic shock and apical ballooning syndrome : Jef Willems¹, Patrick Van de Voorde¹, Katia De Groote¹, Annick De Wolf¹ : 1. Pediatric intensive care and emergencies, UH Ghent, Ghent, Belgium.

BACKGROUND: We describe the case of a 15 year old girl who presented with signs of acute cardiogenic shock, with echocardiographic findings of left ventricle apical stunning, in whom the diagnosis of pheochromocytoma was established. We present a clinical case report, including laboratory, radiographic, echocardiographic and pathologic findings. **CASE:** A 15-year old, previously healthy girl presented at A&E department with a short history of fatigue, vomiting and palpitations, provoked by intense exercise. She rapidly deteriorated with tachycardia, hypotension and acute pulmonary oedema. Mechanical ventilation, vasoactive drug support and ultimately placement of an intra-aortic balloon pump was required. Echocardiography revealed severely impaired left ventricular apical contractility (apical ballooning syndrome or Tako-Tsubo like cardiomyopathy). Over the following days cardiac function recovered completely and the support was weaned. Urine catecholamines were only mildly disturbed (three-fold increase in noradrenaline content, mild increase in normetanephrine and adrenaline). However, further imaging (ultrasonography, MRI) revealed the presence of two abnormal masses, in the left adrenal region and the paravesicular region. After laparoscopic resection, pathologic findings confirmed the diagnosis of multifocal pheochromocytoma. **DISCUSSION:** Pheochromocytoma is a rare disorder in childhood.

Though the association between pheochromocytoma, acute cardiogenic shock and Tako-Tsubo like cardiomyopathy or apical ballooning syndrome is well known in adult medicine, to our knowledge this is the first report of pheochromocytoma presenting with apical ballooning syndrome and severe cardiac failure in the paediatric population.

R76) Cutaneous Methicillin-Resistant Staphylococcus Aureus in a Suburban Community Hospital Pediatric Emergency Department : Neeraja Kairam¹, Michael E. Silverman¹, David Salo¹, Elizabeth Boarto¹, Ben Lee¹, Chris Amato¹ : 1. EM, Morristown Memorial Hospital, Morristown, NJ, USA.

INTRODUCTION: Studies on methicillin-resistant Staphylococcus Aureus (MRSA) infections have typically focused on pediatric and adult populations at urban tertiary care hospitals. Limited data exists on MRSA rates in skin and soft tissue infections (SSTI) in suburban community hospital pediatric emergency departments (PED). **Study Objective:** To describe the prevalence of MRSA in SSTIs in a contemporary suburban community hospital PED population. **METHODS:** Patients 0 - 21 years old with SSTI wound cultures seen at our PED from 2003-2007 were studied. Data analyzed included type of infection (abscess vs. non-abscess), site of infection, and culture results. Chi-square and t-tests were used as appropriate; $p < 0.05$ was considered significant. **RESULTS:** During the study period, 204 cultures were obtained for SSTIs of which 11 were contaminants. Subjects had a mean age of 12.9 years (SD: 6.8 years); 60% were male. The prevalence of MRSA was 27%; MRSA was present in 30% of abscesses versus 2.2% from non-abscess SSTI ($p < 0.005$). By year, the prevalence of MRSA was 10% in 2003, 31% in 2004, 33% in 2005, 31% in 2006, and 29% in 2007. No differences between MRSA and non-MRSA infections were present for gender, age, or site of infection. **CONCLUSIONS:** At our suburban community hospital pediatric ED, MRSA was present in 30% of all SSTI wound cultures; MRSA was unlikely with non-abscess SSTI. Our overall MRSA prevalence data among SSTIs is consistent with previously published reports in pediatric ED populations but may be less than those reported in the adult literature.

R77) Comparison Temporal Artery Thermometry and Rectal Thermometry In Pediatric Emergency Department Patients : Robert J. Hoffman¹, Kumarie Etwaru¹, Naomi Dreisinger¹ : 1. Emergency Medicine, Beth Israel Medical Center, New York, NY, USA.

INTRODUCTION: Fever is among the most common presenting complaints of children and infants presenting to the emergency department (ED). A critical aspect of management of children in the ED is assessment for the presence and degree of fever. This study sought to compare the results of a relatively new technologic method of temperature assessment, temporal artery thermometry, with standard rectal thermometry in patients in a pediatric emergency department. **METHODS:** This was a retrospective evaluation of 300 children 36 months or younger treated in a in an urban medical center. In this center, patients undergo triage with temperature assessed by temporal artery thermometer (TAT) (TAT 2000, Exergen Corporation, Watertown MA). Subsequent to transfer to the pediatric emergency department, infants and patients chosen by clinical selection of the treating clinicians undergo rectal temperature assessment by rectal thermometer (RT) (Turbo Temp Thermometer, Alaris Medical Systems, San Diego, CA). Data extraction from patient charts was performed to obtain paired

TAT/RT in these children, and these were compared by paired t-test. Fever was defined as RT equal or greater than 38°C (100.4°F). Exclusion criteria include use of antipyretics more than 10 minutes prior to the second (rectal) temperature assessment, more than one hour delay between triage and RT assessment, or use of active or passive cooling measures such as tepid bathing prior to RT. Statistical Calculations were performed using Stata 10 IC (Statacorp, College Station, Tx) with $\alpha = 0.05$ and $\beta = 0.8$. RESULTS: A statistically significant difference between TAT and RT was noted ($p=0.0000$). The mean difference between the two was 1.53°F (approx 0.83°C). The mean RT was 100.53°F and the mean TAT was 99°C. CONCLUSION: TAT yielded a lower temperature than RT, and often failed to detect fever. The difference between the result of TAT and RT is statistically and clinically significant. Temperature measured by TAT lacks correlation with RT in children and should not be used for clinical management that requires detection of fever in these patients.

R78) Paediatric Fracture Analgesia : Mark Harrison¹, Gordon Boyle¹ : 1. Accident and Emergency, Newcastle General Hospital, Newcastle, United Kingdom.

INTRODUCTION: In 1990 the Royal College of Surgeons concluded that all patients have a right to relief from pain and any failure in this respect is morally and ethically unacceptable. Relief of pain is of particular importance within EDs, as pain is the most common complaint on attendance at the ED. However pain management within the ED is a cause for concern. Children's pain can be difficult to recognise. Children have been shown to be less likely than adults to receive analgesia in the ED setting, particularly opiates. Timely management of pain in paediatric patients in the Emergency Department is a well-accepted performance indicator. METHODS and RESULTS: 107 children aged 0-16 attending the ED with painful conditions showed that only 14% of children received analgesia at initial assessment, with a mean delay of 32 minutes, and no child had a pain score performed. <5% received any form of opiates. CONCLUSION: This study highlights the inadequate management of paediatric fractures, and calls for better methods of pain relief in children. Perhaps advances such as ketamine, intranasal diamorphine etc will help to make the delivery of analgesia to children a routine rather than an option.

R79) An Analysis of Pediatric Acute Intoxications in an University Hospital : Sabiha Sahin¹, Ener C. Dinleyici¹ : 1. ESOGU, Eskisehir, Turkey.

INTRODUCTION: Acute intoxication continues to be an important cause of hospitalization of children. The aim of this retrospective study was to evaluate etiological and demographic characteristics of acute poisoning children presenting with acute intoxication. METHODS: Between 1st Jan-31st Dec 2008, epidemiologic and clinical characteristics of 281 intoxication cases aged between 1-18 years who were admitted to the pediatric ED (emergency department) of the University Hospital were reviewed. Age, sex, mental status, symptoms, treatment hospitalization period and mortality rates were included in the study. RESULTS: Two-hundred and eighty-one patients (of which 72 were suicidal poisoning cases) were admitted to the pediatric ED. The ratio of the number of poisoning cases to all PED admission was 2.3%.

Pharmaceutical agents were the major cause in (48.3%) of the cases, followed by corrosives (23.1%), carbon monoxide (12.5%), and hydrocarbon (5.6%), pesticide. The analgesics were the most commonly used, followed by MDH (methylphenidate) and TCA (tricyclic antidepressant). Corrosives were the major cause (34%) in patients aged between 1-4 years. Accidental poisoning occurred most commonly (73.7%), followed by suicidal (25.6%) and therapeutic poisoning (0.7%). All of the suicidal patients were between the age of 10-18 and most of them (66.6%) were female. Accidental poisoning was the most common cause among boys (84.8%) especially under age 5. 129 (45.9%) patients were discharged after an observation period of 24h. No mortality was reported. **CONCLUSION:** MDH poisoning and corrosive poisoning had increase compared to increase to the past years. Teenage girls are the highest risk group for suicide attempt from ingestions. The corrosive agents and cosmetic materials are dangerous and the most common cause for children under five years of age. Although preventive measures and development of poison centers have contributed to decrease mortality from acute intoxication efforts should be directed at suicide prevention, especially among teenage girls and protection at children younger than five years from corrosive agents and drugs.

R80) An Analysis of Pediatric TCA Overdoses in a University Hospital : Sabiha Sahin¹, Nejat Akgun¹ : 1. Eskisehir Osmangazi University Paediatric Emergency Department, Eskisehir, Turkey.

INTRODUCTION: Recently tricyclic antidepressant (TCA) agents are being widely used in treatment of many diseases. As an outcome of this, TCA poisonings are increasingly reported. In this report, we analysed children who were poisoned with TCA as a single agent. **METHODS:** During 1st Jan 2008-31st Dec 2008, in a pediatric emergency department (ED) of a university hospital, 30 patients who were poisoned with TCA as a single agent were evaluated retrospectively. Age, sex, mental status at arrival to ED, Glasgow Coma Scale (GCS), blood TCA level, complete blood count (CBC), arterial blood gas analyses, ECG, symptoms on follow-up and time interval from arrival to discharge were recorded. **RESULTS:** Patients' mean age was 10.45 (1.5 - 17) 23 of the patients were female. 17 of the patients were intentionally poisoned (with the aim of suicide) and 15 of these patients were female and they were all older than ten years old. Of unintentionally poisoned patients, five were female and eight were male and they were all younger than ten years old. The mean time interval between ingestion of TCA and arrival to the ED 3.1 hours. Symptoms were altered mental status (22 patients), vomiting (5 patients), witnessed ingestion (3 patients). GCS score was lower than 8 in 5 cases. In 5 cases, blood level of TCA was >1000µg/mL (normal range: 50-250 µg/mL, semiquantitative way with enzyme immunoassay method) and wide QRS on ECG (>0.12 ms). CBC, electrolytes, renal and liver function tests were normal in all patients. There were 22 amitriptyline and 8 imipramine poisonings. Gastric lavage, charcoal and alkalisation, were applied to all patients, convulsion or dysrhythmia occurred. Only one patient had a dystonic reaction. Patients were followed in critical care unit for 6-72 hours and mean hospitalisation time was 52 hours. One patient stayed in hospital for 7 days. All patients were re-examined 2 weeks after discharge and no pathological signs and symptoms we recorded. **CONCLUSION:** A physician must be alert for TCA intoxication in cases with altered mental status, low GCS score, wide QRS. Early diagnosis, monitorisation and symptomatic treatment are needed.

R82) Primary meningococcal septic arthritis: Case report : Isabel Puente¹, Antonia Matamalas¹, Margarita Puiggali¹, Albert Alier¹, Alberto Torres¹, Carlos Clemente¹, Santos Martinez¹ : 1. Emergency, IMAS, Barcelona, Barcelona, Spain.

BACKGROUND: Septic arthritis is a frequent complication of meningococcal meningitis but isolated meningococcal arthritis is very rare. We describe a case of primary septic arthritis caused by meningococcus in a child. **CASE:** A 17-month-old male child with a swollen left foot and functional impairment. In the previous 3 weeks, he suffered from upper respiratory tract infection. A diagnosis of bronchitis was made and treated with bronchodilators and oral steroids. On physical examination, the foot was swollen and painful on movement but signs of inflammation were lacking. The body temperature was normal. Radiological findings were unrevealing and he was treated with an anti-inflammatory drug. 48h later, he was readmitted because of fever. Physical examination: temperature 37,3. Swollen foot and ankle without signs of inflammation, in equinus position. Presence of left inguinal lymph nodes. Laboratory test: leukocytosis 13,850 without left shift and serum CRP of 8,5. Echography: Fluid in the astragalotibial joint. A purulent fluid was drained by arthrocentesis and empirical treatment with cloxacillin was started according to protocol. Treatment was changed to cefotaxime 48h later because of the isolation of intracellular gram-negative diplococci suggestive of meningococci which was confirmed by culture. **Outcome:** Fever disappeared 24h after admission and progressive improvement of foot edema and reduction of pain was noted. The patient was discharged from the hospital at day 9. **DISCUSSION:** Meningococcal arthritis has three presentations: Septic arthritis as a complication of acute meningitis; the most frequent, 5% of children and 11% of adults. Immune complexes-mediated arthritis as a complication of meningococcemia, with sterile cultures. It occurs in up to 10% of meningococcal systemic diseases. Primary septic arthritis without meningococcal systemic disease, the rarest form (1% of septic arthritis). It may be preceded by a flue-like episode, is more frequent in children, and in the male sex and large joints are especially affected. The prognosis of meningococcal arthritis is favourable with a good therapeutic response. Articular sequela are rare.

R84) Evaluating The Use Of Heart Rate Variability For The Prediction Of Mortality In Critically Ill Patients Presenting To The Emergency Department : Marcus E. Ong¹, Pavitra Pamanabhan², Yiong Huak Chan³, Zhiping Lin³ : 1. Dept of Emergency Medicine, Singapore General Hospital, Singapore, Singapore. 2. School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore, Singapore. 3. Yong Loo Lin School of Medicine, National University of Singapore, Singapore, Singapore.

INTRODUCTION: Aims: To explore the utility of heart rate variability (HRV) as a predictor for clinical outcomes such as hospital admission, ICU admission and mortality. This may have potential as an additional 'vital sign' to identify patients at risk of poor outcomes. **METHODS:** ECG data was obtained from a sample of 500 critically ill patients attended to at the Department of Emergency Medicine, SGH who were monitored with LIFEPAK 12 defibrillator monitors. After extracting the data, filtering for noise reduction and isolating non-sinus beats, 14 HRV parameters were computed. These include time domain (RMSSD, nn50, etc), frequency domain (VLF, LF, HF, etc) and geometric parameters (TINN, triangular index). Patient outcome and vital signs were obtained from ED and hospital records. Principal

component analysis (PCA) was performed on the outcomes. RESULTS: The following variables were found to be significant contributors to the outcome of death with $p < 0.01$: age, Glasgow Coma Score, respiratory rate, aRR, VLF power, LFnorm, HFnorm and LF/HF ratio. For the outcome of ICU/ICA/HD admission, pain score and STD were found to be significant predictors. Overall, frequency domain HRV parameters were found to be significant predictors of death. When combined in a PCA, these parameters predicted death with a sensitivity of 75.5% (95% CI 62.6%-85.2%), specificity of 53.0% (95% CI 51.6%-54.0%), positive predictive value (PPV) of 14.9% (95% CI 12.3%-16.8%), negative predictive value (NPV) of 95.2% (95% CI 92.7%-97.1%) and ROC area of 0.73 (95% CI 0.63-0.84) and ICU/ICA/HD admission with a sensitivity of 70.4% (95% CI 63.7%-76.4%), specificity of 43.6% (95% CI 37.8%-49.5%), PPV of 48.1% (95% CI 42.4%-53.8%), NPV of 66.5% (95% CI 59.2%-73.1%) and ROC area of 0.60 (95% CI 0.55-0.65). CONCLUSION: We found HRV parameters to have an association with clinical outcomes in patients presenting to the Emergency Department. HRV shows potential as a triage tool.

R85) Prehospital Fibrinolytic Therapy and Angioplasty During Hospital Admission: An Alternative to Primary Percutaneous Coronary Intervention? : Navid Behzadi Koochani¹, Arturo De Blas De Blas², Miguel Angel Salinero³, Manuel Taboada Castro¹, Isabel Canales Corcho¹ : 1. SUMMA112, Madrid, Spain. 2. SAMUR-PC, Madrid, Spain. 3. SERMAS, Unit of Formation and Investigation Area 4, Madrid, Spain.

INTRODUCTION: Prehospital Fibrinolytic Therapy (PhFT) is the earliest reperfusion strategy we can provide to acute STEMI patients in an average time of 100 min from symptoms onset. The interval that saves as much myocardium as possible, is 120 min, then it decreases dramatically. This time is longer for Hospital Fibrinolytic Therapy (HFT) and Primary Percutaneous Coronary Intervention (PPCI), 160 and 235 min respectively. When PhFT is associated with early PCI during hospital admission, it improves one-year survival compared to PPCI. It also reduces the size of myocardium infarcted, and improves left ventricular ejection fraction (LVEF) in the same way as PPCI. The majority of studies compare PPCI with HFT as the reference. However PhFT greatly reduces time of myocardial ischemia and is associated with lower mortality. Objectives: 1. To evaluate the effect of PhFT and early PCI during hospital admission versus PPCI, in the improvement of LVEF at hospital discharge, mortality, and quality of life. 2. To estimate the "PCI-related delay time" (the difference between the time from first out-of-hospital medical contact, FMC, to balloon inflation minus the time from FMC to start of out-of-hospital fibrinolytic therapy), and its implications. METHODS: We will perform an observational, retrospective, multicenter, non-randomized cohort study. In both cohorts (PhFT and not PhFT), data will be collected from a series of intermediate variables (cardiovascular risk factors and prediction factors according to the GRACE Risk Scale) and final variables (LVEF, Mortality, and Post Myocardial Infarction Quality of Life according to a survey adapted to Spanish population, Mac-New QLMI). The data source will be clinical records of SUMMA 112 and "24 h PCI-capable" hospitals. We will implement generalized estimating equations with LVEF as the dependent variable. In addition to the type of exposure, we will include: LVEF number, Therapy Strategy, Hospital and a LVEF interaction by time door-to-needle/door-to-balloon to it; similarly with the dependent variables, Quality of Life, and

Mortality.

R86) Unlike intact immunoglobulin, intravenous administration of freeze-dried sulfonated human normal immunoglobulin for septic patients enhances insulin-like growth factor-1(IGF-1) production and tends to make anti inflammatory effects : Takao Nakagawa¹, Y. Deguchi¹, H. Suga¹, M. Nishina¹, H. Takahashi¹, T. Kobayashi¹, T. Sato¹, S. Nishikubo¹, K. Okajima², N. Harada² : 1. Emergency Medicine, Tokyo Women's Medical University Medical Center East, Tokyo, Japan. 2. Nagoya City Univeristy graduate school of medicine, Nagoya, Japan.

INTRODUCTION: Through animal models, we demonstrated that intravenous administration of freeze-dried sulfonated human normal immunoglobulin (Venilon-I®) produces anti-inflammatory effects with the stimulation of sensory nerves by the interaction with FC? receptor on the surface of the sensory nerves to enhance the production of Insulin-like Growth Factor-1 (IGF-1) and inhibit the production of Tissue Necrosis Factor (TNF), but intravenous administration of intact immunoglobulin does not. In this study, we examined these results in the clinical setting. **METHODS:** Among septic patients transported to our hospital from April 2007 to May 2009, 44 patients with high level of soluble E-selectin were surveyed. They were divided into three groups, Sulfonated globulin group (Venilon-I ® 5 g/day, 3 days: S-group, n=18), Intact globulin group (Venoglobulin-IH ® and globenin-I ® 5 g/day, 3 days: I-group, n=14) and non-administered group control group (C-group, n=12). We measured the level of SES and IGF-1 on arrival and every other day (days 0, 1, 3, 5, 7). **RESULTS:** In S-group, the value of IGF-1 on day 7 ($157.1 \pm 34.66\text{ng/ml}$) was significantly higher, than that on day 0 ($75.3 \pm 38.6\text{ng/ml}$). Furthermore, the value of IGF-1 of S-group ($158.1 \pm 34.68\text{ng/ml}$) were significantly higher than that of I-group ($87.93 \pm 37.48\text{ng/ml}$, $p<0.0001$) and C-group ($100.5 \pm 30.21\text{ng/ml}$, $p<0.05$) on day 7. Concerning about SOFA score except GCS, in S-group, there is a tendency to improve score gradually. **CONCLUSION:** Intravenous administration of freeze-dried sulfonated human normal immunoglobulin for septic patients enhances insulin-like growth factor-1(IGF-1) production and tends to produce anti-inflammatory effects.

R87) Meaning of Discovering Mesenteric Panniculitis at Emergency : Jose F. Peris Giner¹, Jaime Fernandez Campillo¹, Ivan Malishevsky¹, Gustavo Alberto Fossato¹, Juan Carlos Medina Alvarez¹ : 1. URGENCIAS, HOSPITAL DE TORREVIEJA, Orihuela Costa, Alicante, Spain.

INTRODUCTION: Target objective to know the nature of patients diagnosed with mesenteric panniculitis. **METHODS:** All the medical histories of patients with mesenteric panniculitis assessed since the hospital opened, two years ago, were reviewed. **RESULTS:** Seventy-two cases were found, 61% were woman and 39% men, with an average age of 78. The youngest was a 29 years old and oldest was 89. They were all diagnosed by CT scan. 59+9% of the cases were related to a harmful neoplasia, with lymphoma, colon, pancreas and lung, the most common. 26% of the cases were not related to any other pathology being classified as idiopathic. The last 15% were related to abdominal pathologies such as diverticulitis, pancreatitis, mesenteric ischemia acute gastroenteritis, etc. **CONCLUSION:** Any patient diagnosed with mesenteric panniculitis by means of a CT scan without justification of an acute abdominal pathology, should be treated either in ward or by out patients consultants, according

to the patient's state.

R88) Raising Research from the Rubble: Effect of Hurricane Katrina on Medical Research : Deborah E. Sibley¹, Lala M. Dunbar¹, Rayme Edler¹, Kenneth Kratz¹, Charlene Walvoord¹ : 1. Louisiana State University Health Sciences Center, New Orleans, LA, USA.

INTRODUCTION: Hurricane Katrina hit the Gulf Coast August 29, 2005 disrupting the medical infrastructure of New Orleans(NO). Medical care including research came to a standstill. This study examines the effect Katrina had on medical research in the NO area. **METHODS:** Data collected from medical facilities, local IRBs and researcher interviews was compiled to assess the impact of the disaster. Studies prior to the storm are compared to immediately following and to the present. Personal accounts have been documented as to how research projects fared in the aftermath of the worst natural disaster in US history. Before Katrina 3 major medical facilities in the NO area: Tulane University Medical Center, Louisiana State University Health Sciences Center, and Ochsner Hospital were conducting trials. **RESULTS:** About 300 federally funded projects at NO colleges and universities were affected in some way, according to the NIH. Within 6 months after Katrina, only 5 research groups had returned to NO, including the LSU HIV Outpatient Clinic and the LSU Emergency Medicine Research team. The Stanley S. Scott Cancer Center relocated to Baton Rouge as did the Dental School. Two independent research groups relocated; the New Orleans Center for Clinical Research moved its entire inpatient operations to Knoxville, TN, but has resumed OP studies in New Orleans. Controlling factors include displaced physicians, support staff, and study subjects, damaged or destroyed facilities and scrutinizing sponsors and administrators. All labs that handled bioweapons research involving pathogens, reported to the Centers for Disease Control and Prevention that their security wasn't compromised. Tulane's National Primate Research Center reported minor damage with none of its research animals lost. LSU lost all of its lab animals. **CONCLUSION:** Developments of new regulations and procedures have been implemented as a result of the disaster. There has been a slow resurgence of clinical and basic trials. Changes to policies have improved in anticipation of future disasters. Optimism that the Medical Research Community in NO will resume pre-Katrina levels is on the rise.

R89) A Case of Delayed Epidural Bleeding : Figen Coskun¹, Emine Akinci¹, Mirac Ozturk¹, Mehmet A. Karamercan¹, Sebnem Bozkurt² : 1. Ankara Training and Research Hospital, Ankara, Turkey. 2. Istanbul Fatih Sultan Mehmet Training and Research Hospital, Istanbul, Turkey.

BACKGROUND: Head traumas being the third most common cause of mortality and morbidity in children should be evaluated cautiously including the cause of trauma, intracranial lesions and treatment algorithm. Epidural bleeding is less frequent in children compared to adults and might rarely be seen in infants. **CASE:** Three-year-old boy was brought to emergency room by his parents with complaint of headache. His history was notable for a fall from half a meter on a soft ground 3 days ago. He had no symptoms such as nausea, vomiting or loss of consciousness after the incident. He had headaches for 2 days. On physical examination he was alert, oriented and cooperative with a Glasgow Coma Scale (GCS) of 15,

his detailed neurological examination was normal, there were no signs of meningeal irritation, and Babinski reflexes were negative on both sides. Examination of other systems was unremarkable. Cranial computerized tomography (CT) was ordered due to headache following a history of trauma. The images revealed an epidural hematoma (EH) of 5 cm in left temporal lobe, bony structures were normal. His routine blood chemistry and complete blood count were also normal. The patient was operated by neurosurgery and hospitalized in intensive care unit. He was discharged with intact neurological functions on day-4.

DISCUSSION: Despite a better prognosis compared to adults, head trauma is still one of the leading causes of mortality and morbidity in childhood. The origins of epidural bleeding in children and adults are different. The classical bleeding site in adults are the meningeal arteries whereas children may have an epidural hematoma as a result of a venous bleeding from dural sinus or diploe. It may take a long time for blood to accumulate and create a mass effect. Children may not necessarily have the classical lucid intervals described in most of the EH cases. Older children frequently complain of headache with increasing intensity which is followed by lethargy and confusion. Physicians should be alert in children with history of head traumas.

R90) How can an international survival focused trauma register be implemented into a large tertiary care emergency department? Methodological considerations and preliminary results of the first 50 cases : Maximilian J. Hartel¹, Nicole Jordi¹, Kathrin Dopke¹, Heinz Zimmermann¹, Aristomenis K. Exadaktylos¹ : I. Department of Emergency Medicine, Inselspital, University Hospital, Bern, Switzerland.

INTRODUCTION: Diagnostic and therapeutic approaches to trauma patients are, depending on experience, equipment and different therapeutic doctrines, subject to wide variations. The ability to compare trauma centres among each other using a standardized trauma register helps to reveal unresolved systemic and methodical issues and simplifies thus the quality management in an ED. **METHODS:** In a first step, an international trauma register was chosen, applicable for a level one trauma centre. Next, a team responsible for the register management was built within the emergency department. Minor systems adjustments were necessary in order to gather all the information needed for complete assessment in the register. Patient's data of the first fifty patients were entered into the online submission system between October 2008 and January 2009. **RESULTS:** The UK-based TARN®-Register was chosen. UK's and Ireland's emergency medicine system was found to be the best comparable with the one in Switzerland. Different than other only mortality oriented systems, the TARN® database is capable of predicting the probability of survival of patients. One study coordinator, two medical doctors, one doctorate, two study nurses, and one systems administrator is maintaining the register. Data about vital signs as well as clinical, radiological, lab test findings and performed therapeutic measures were collected from the pre-clinical phase, the ED, the ICU and OR, the regular wards and subsequently entered into the online submission system. **CONCLUSIONS:** The TARN® register could be identified as an appropriate solution for a level one trauma centre. Staff and system requirements were arranged in order to regularly maintain a reliable data acquisition for the register. The institutions' needs of constantly optimising health care services to trauma patients are met. Results of the first 50 patients (e.g. time to CT, time to OT, survival) will be presented and contrasted to already published data

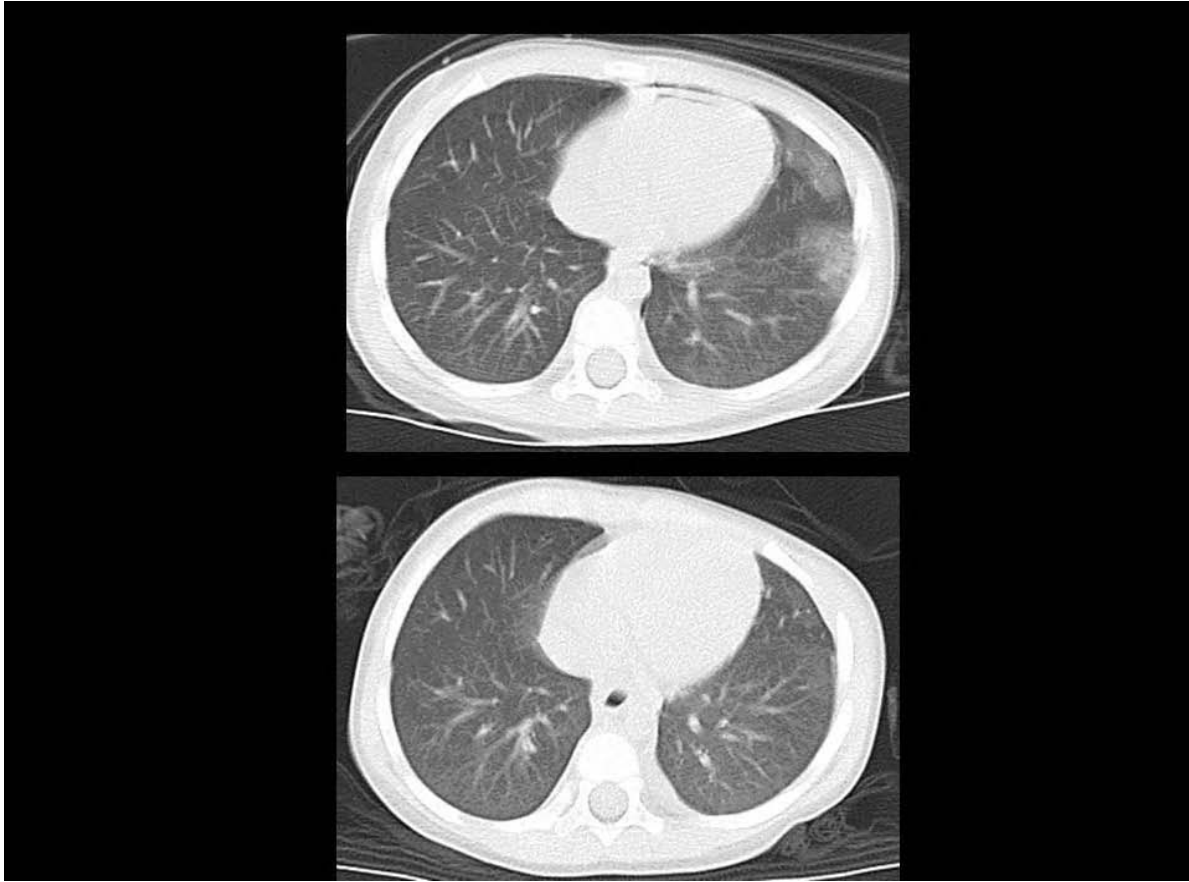
and to the results of other centres connected to TARN.

R91) A patient with a transient high-density-area on computed tomography in a juvenile lung injury. -The possibility of traumatic lung edema- : Youichi Yanagawa¹ : 1. Traumatology and Critical Care Medicine, National Defense Medical College, Tokorozawa, Saitama, Japan.

The histopathological pattern of pulmonary contusions involves the disruption of alveoli, with consequent intra-alveolar and interstitial edema and hemorrhage. Computed tomography (CT) allows for earlier identification of lung contusion than plain roentgenograms because of its high contrast resolution. The CT examinations usually reveal complete resolution of pulmonary contusions, without sequelae, within 1-2 weeks after the trauma. However, in one patient, the pulmonary lesions induced by a blunt chest trauma observed on CT completely disappeared within 24 hours following the trauma.

A one-year-old female was run over by a car. She was transported to the hospital and arrived 15 minutes after the accident. She had no particular past or family history. On arrival, she showed a full score of Children's Coma Score and her vital signs were stable. She had a tire tread marking on the body. Her oxygen saturation in room air was 98%. A biochemical analysis of the blood indicated a liver injury. Her chest roentgenogram was negative; however, chest CT demonstrated left multiple ill-defined and hazy ground-glass-density areas (Figure 1a) 30 minutes following the accident. She was treated with conservative therapy. On the 2nd day in the hospital, her oxygen saturation was 100% with room air. On the same day, chest CT within 24 hours following the trauma revealed the disappearance of the pulmonary lesions (Figure 1b). She discharged without any respiratory problems.

This is the first report that the pulmonary lesions induced by a blunt chest trauma observed on CT completely disappeared within 24 hours following the trauma. One possibility is that the transient pulmonary lesions were a transient malfunction of the blood-gas barrier in the alveoli. The lung is particularly vulnerable to injury because the blood-gas barrier is extremely thin. Accordingly, mechanical insult may cause a malfunction of the blood-gas barrier and lead to the formation of lung edema.



upper (Figure 1a), lower (Figure 1b)

R92) Car accidents in Crete: Comparison between seasons, days of the week, and hours of the day : Magda Zeaki¹, Kiriaki Papadaki¹, Soula Loulaki¹, Michael Zervopoulos¹, George Notas¹, Panagiotis Agouridakis¹ : 1. National Center of Prehospital Emergency Medical Care. Department of Crete, Heraklion, Crete, Greece.

INTRODUCTION: Aim: Evaluation of time, locations, and EMS response for car accident trauma cases in Crete. **METHODS:** Prospective registration of all car accident trauma cases from August 1st 2008 to January 31st 2009. Parameters studied were: age, sex, nationality, accident location, time of the day (24 hours), day of the week, month of the year and response time (from call to hospital arrival). Statistical analysis was performed with x2 and one-way ANOVA where applicable. **RESULTS:** Crete covers an area of 8.259 Km² with a population of 601.000 (census 2001) that doubles during summer months. 65% of the population lives in or at the surroundings of the 3 major cities of the island. 1492 trauma cases were recorded during the study period; 73% of them in urban and 17% in rural areas, which account for 10.5% of all EMS calls for urban areas vs 7.6% of rural areas calls. Response time for urban

areas was 27.22 min (range: 8-81') vs 66.84 min (range: 52-180') for rural areas. Mean age of patients was 33.38 years. 71.7% were men, 28.3% women. Greek to non-Greek ratio was: 82%. Significantly fewer cases were recorded between 00:00 to 04:00 (6.7% vs the average 14.26% of the rest of the 4 hour time frames of the day. There was a significant difference between the two representative months of the year (August and January) showing a 100.5% increment in August (395 vs 197) vs 20% increase of the total emergency calls. Accidents peaked on Fridays and Saturdays with a nadir observed on Tuesdays and Wednesdays. CONCLUSION: There are significant differences in trauma cases among the time of the day, the day of the week, and the months of the year that can be used for better preparation of the EMS system.

R93) Preliminary hospital procedures in cases of severe multiple body trauma : Przemyslaw Gula¹, Malgorzata Koszowska² : 1. Emergency Department at the St. Barbara Voivodship Specialist Hospital, Sosnowiec, Poland. 2. Institute of Emergency Medicine, Krakow, Poland.

INTRODUCTION: Treatment of severe body trauma constitutes one of the major challenges for contemporary medicine. In Poland, severe body trauma constitutes the major cause of death for people below 40. METHODS: An analysis of 112 severely injured patients admitted to the Hospital Emergency Department in Sosnowiec. This group was exclusively limited to patients with severe body trauma and at least 25 ISS points. RESULTS: The analysed group was predominantly male (73%) with an average age of 41 and a median trauma severity score of 45 ISS points. The median number of body areas injured was 3. 23.3% of the injured required immediate surgical procedures, while 14.3% died at the Emergency Department following futile resuscitation attempts. All other patients, after preliminary diagnosis and stabilisation, were transferred to the clinical wards at the hospital for further treatment. Discussion: We will discuss the results of the evaluation of the accepted organisational algorithm and the rules of procedure based on the ATLS system applied in the Polish emergency medicine system environment in the context of treating patients with severe body trauma. CONCLUSIONS: There is an urgent need to establish a Trauma Registry system which would facilitate exchange of data between trauma centres. In order to base the procedure algorithm on, among other things, the ATLS standards, would require application of solutions taking into account experience and organisation of systems in the specific countries. Algorithms, however, constitute a good reference point for the creation of detailed procedures which must be implemented in all the links of the emergency medicine system.

R94) DO SERVICES THAT RESPOND TO PERCEIVED NEEDS ALLOW PEOPLE TO TAKE UP THEIR LIVES WHERE THEY LEFT OFF?

What good is it knowing how to walk if you don't know where you're going? : Hélène Lefebvre¹ : 1. Faculté des sciences infirmières, Université de Montréal, Montréal, QC, Canada.

INTRODUCTION: This project was carried out in Quebec and in France and allowed the empirical evaluation of the complementary aspects of respective knowledge. The objectives of the project were: 1) To identify the needs of people with a traumatic brain injury (TBI) and those close to them in a social inclusion perspective and 2) to identify the services offered by the healthcare system to fulfill these needs. METHODS: The project relied on qualitative

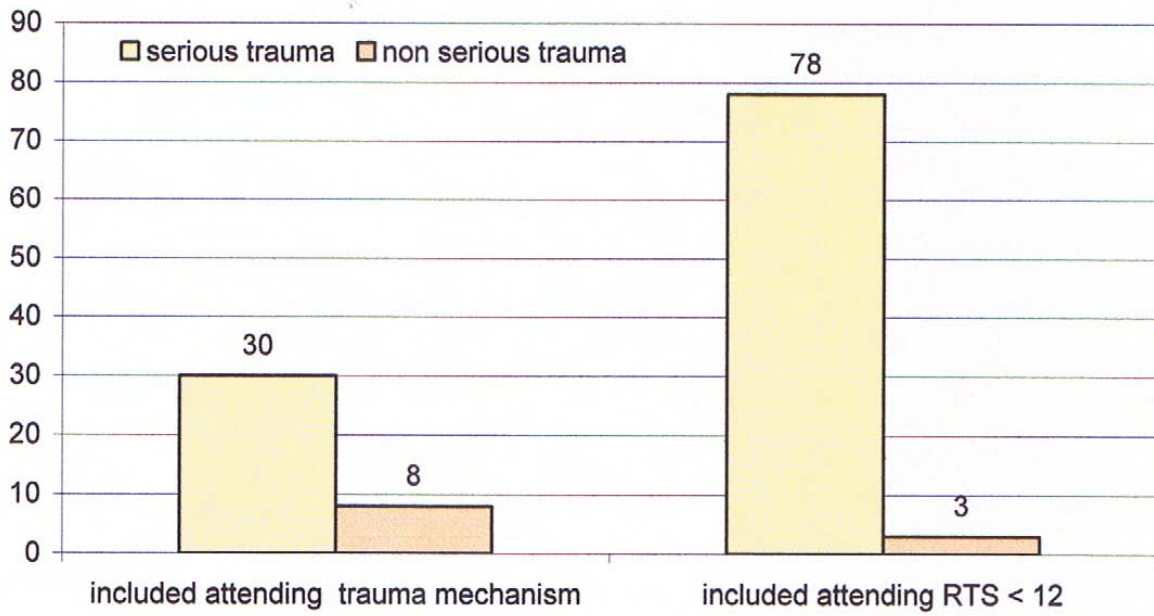
research and was conducted in three regions of France and three regions of Quebec. The data were collected through discussion groups with 150 participants: people with a TBI, those close to them, and interveners. The results obtained in France were compared to those obtained in Quebec so as to identify converging and diverging elements between the services provided in France and those offered in Quebec, as well as the perception of the actors in these networks regarding the correspondence between the needs of people and the services provided.

RESULTS: In France and in Quebec, important efforts are made to insure the best care and the accessibility and continuity of services. The results focus on the similarities and differences between the French and Quebec systems regarding the relationship with interveners and the services available at each phase of the continuum of care. The similarities and differences at the informational level are also addressed. **CONCLUSION:** The recommendations suggested by the participants to improve the services offered in the hopes of picking up their lives where they left off are described.

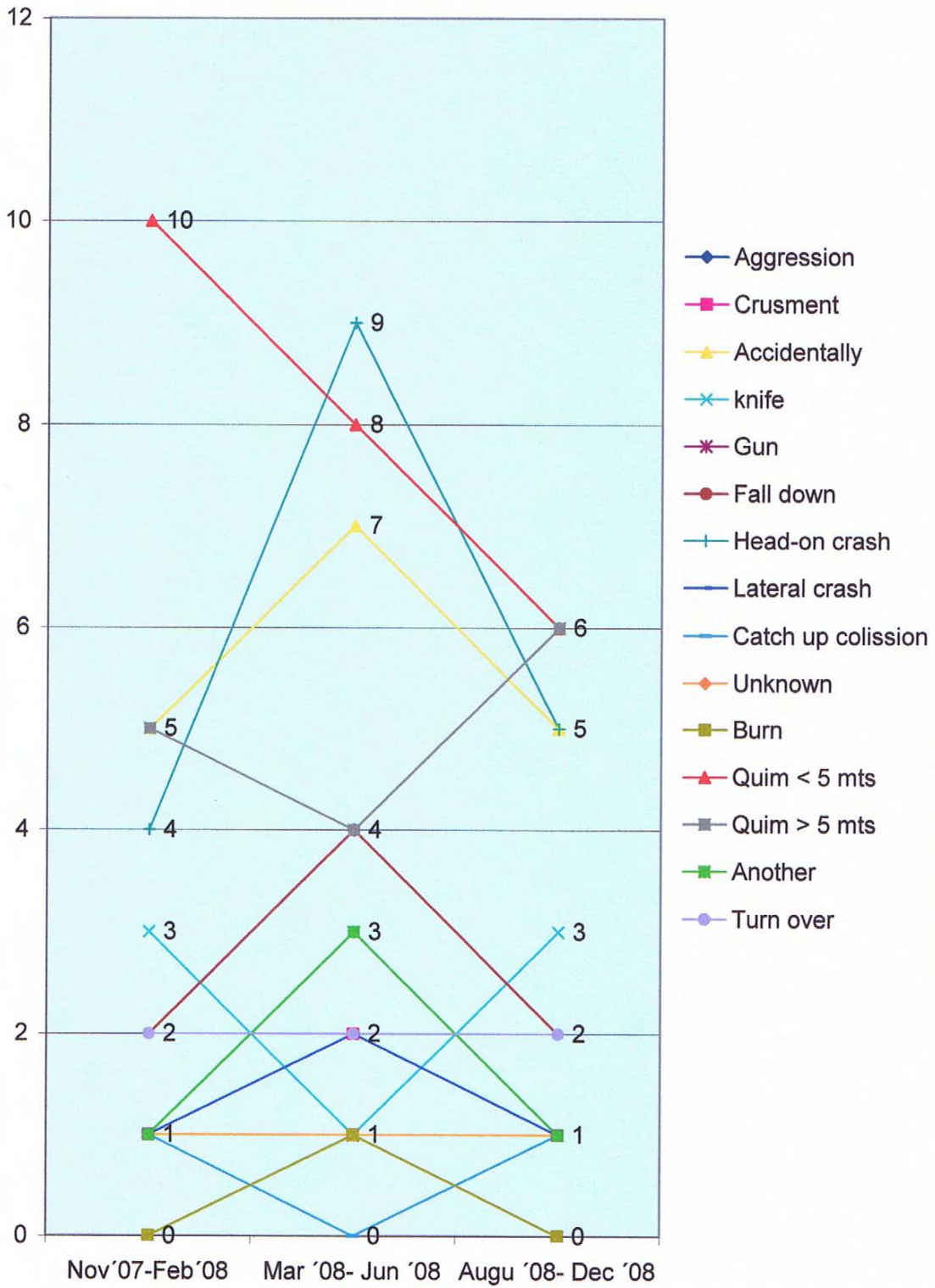
R95) Triage in the emergency department: trauma score or trauma mechanism : Antonio Noval¹, Manuel Fuentes Morillas¹, Manuel González Fernaández¹, Carmen Rosa Hernandez Rodríguez¹, Dácil Cárdenes Jiménez¹, Ayose Pérez Miranda¹ : 1. Servicio Canario de Salud, Las Palmas de Gran Canaria, Las Palmas, Spain.

INTRODUCTION: The revised trauma score or similar sets of values should not be the only criteria in the evaluation of a trauma patient. The trauma mechanism must be considered as fundamental data related to these types of patients. **METHODS:** Initially, we included in the triage system just the Revised Trauma Score (systolic arterial pressure, respiratory frequency and Glasgow coma score) for trauma patients who might have serious injuries that could threaten their lives. Patients with score <12 were attended as indicated by the emergency department protocol. Subsequently we decided to include them in this system based also on the trauma mechanism. **RESULTS:** Between November 2007 and December 2008, we attended 119 possible serious trauma patients. Most common trauma mechanism were: 39 falls (32.77%), 18 frontal crashes (15.13%) and 17 knocks down (14.29%). 38 of them (31.99%) obtained a score of 12 on the Revised Trauma Score and were included according to the trauma mechanism, from which 30 (78.95%) suffered from injuries that threatened their lives. From this experience we determined that if the only criteria had been the Revised Trauma Score, 25.21% of the patients wouldn't have been considered as serious trauma at triage. The rest of the sample, 81 patients (68.01%), had a Revised Trauma Score below 12, of whom 3 (3.70%), after the initial attendance, were diagnosed as no serious trauma. One of these low Revised Trauma Scores was from an intubated patient and the other two because of high respiratory frequency, which was treated with analgesic. **CONCLUSION:** The inclusion of a patient as possible serious trauma should not be done just by the trauma score obtained when attended. It is very important to know the trauma mechanism to do a correct triage even if there is not any alteration in the parameters measured by the trauma score.

RTS vs Trauma mechanism



Trauma mechanism



R96) Traumatic Unstable C-spine Injury : Alyssa Lyon¹, Lisa Moreno-Walton¹ : 1. Emergency Medicine, Louisiana State University Health Sciences Center, New Orleans, LA, USA.

CASE: 52-year male presented to ED with severe neck pain and tingling in right arm after falling and striking his occiput on stairs, causing forceful flexion of his neck. He was able to move his legs but didn't attempt to ambulate. Vital signs were normal, GCS 15, no sign of external trauma, marked tenderness to palpation over posterior midline C4-7. Strength was 5/5 with pain on movement and decreased sensation of RUE. Patient was maintained in cervical immobilization and required narcotic analgesia. Past medical history: "Neck problems". CT revealed L C5-6 jumped facet, R C5-6 perched facet, 6 mm anterior subluxation of C5 on C6, but no evidence of spinal cord compression. There were extensive degenerative changes and central spinal stenosis. Neurosurgery was consulted and placed patient in traction for closed reduction attempt, which failed. He was taken to OR for open reduction and fusion of C5-6 via posterior cervical laminectomy. Postop, RUE paresthesias and pain persisted. He developed weakness in B upper extremities, but began physical therapy and developed no other deficits, was ambulatory and ready for discharge POD 4 but remained in hospital for 3 weeks until outpatient rehabilitation could be finalized. DISCUSSION: The injury in this case was very significant with a potential to be devastating. Suspicion of injury was high, given pre-existing degenerative disease, mechanism, pain, and abrupt neurologic deficit. A unilateral jumped facet with contralateral perched facet is considered unstable and treated as a bilateral facet dislocation. This type of injury results from extreme hyperflexion of the neck, with anterior subluxation of the vertebral bodies due to ligamentous disruption. Under extreme flexion, the superior facets are displaced anteriorly on the inferior facets. Suspect this injury if there is displacement of more than half the anteroposterior diameter of the vertebral body in the lateral xray view. Bilateral facet dislocations have a high prevalence of associated spinal cord injury and should be promptly managed by a neurosurgeon. In ED it is important to maintain proper cervical spine immobilization, to educate the patient about his condition, and to provide adequate pain control.

R97) An Anterior Talar Dislocation With Displaced Fibula Fracture : Lisa Moreno-Walton¹, Michelle Haydel¹ : 1. Emergency Medicine, Louisiana State University Health Sciences Center, New Orleans, LA, USA.

CASE: Chief Complaint: "My foot is killing me." History of Present Illness: 24 year old male restrained driver, talking on his cell phone while driving at about 45 miles per hour. He rear ended a car stopped at a stop sign. In a last minute attempt to stop, the patient's foot became jammed under the brake peddle during the impact. There was significant intrusion of the engine compartment into the vehicle cabin from the impact. Past Medical History: Negative. He takes no medicines, has no allergies and uses no illicit substances. Physical Exam: 128/90 107 22

Afebrile pulse ox 98% on room air. HEENT: Glass shards in hair; superficial abrasions to face. TMs, nares, oral pharynx normal. Neck: in cervical collar with trachea midline and no evidence of swelling. Lungs: Clear with bilateral breath sounds equal. Cor: Tachycardic with regular rhythm. Abdomen: Scaffoid, soft, non-tender with normal bowel sounds. Ext: Left lower extremity is deformed at ankle, with ecchymosis, swelling, and tenderness. Dorsalis pedis pulse is 1+, and the skin is cool with 2 second capillary refill. (An xray of an anterior talar dislocation with distal fibula fracture will be shown here.) DISCUSSION: Unlike the more common hindfoot injury, the subtalar dislocation, in which the calcaneus, navicular and forefoot are displaced in relation to the talus, this dislocation must be reduced in the operating room as an open procedure. Avascular necrosis of the talus is the most common complication. These relatively uncommon injuries require high energy transfer. Search for associated injuries. In the more common subtalar dislocation, closed reduction is facilitated by the use of procedural sedation. The patient remains in a supine position with the ipsilateral hip and knee flexed and the foot hanging over the bed. The doctor grasps the heel, while holding the forefoot with the opposite hand and applying traction along the long axis of the body. The foot is initially rotated to INCREASE the deformity and then reversed to reduce the dislocation. ALWAYS check neurovascular status both before and after any reduction.

R98) Every Bullet has its Billet : Figen Coskun¹, Emine Akinci¹, Cahit H. Halhalli¹, Kubilay Vural¹, Yavuz Katirci¹, Sebnem Bozkurt² : 1. Ankara Training and Research Hospital, Ankara, Turkey. 2. Istanbul Fatih Sultan Mehmet Training and Research Hospital, Istanbul, Turkey.

BACKGROUND: Gunshots cause complicated injuries by a few mechanisms; bullets and its particles damage not only the target organ but also surrounding tissues by blast effect and they usually change direction inside the body leading to damage to other organs localized other than the entrance pathway. We present a case of gunshot injury in which a bullet from a close shot followed an interesting route with no damage to vital organs. **CASE:** 34-year-old male patient presented with gunshot injury from a close shot. An entrance lesion was found on the patient's left temporomandibular region. His general status was moderate, conscious and alert, vitals were within normal limits. Head and neck examination was remarkable for an entrance lesion of 0.5 cm diameter, surrounded by ecchymosis and swelling of 3 cm on the left temporomandibular joint. Tenderness on the lower cervical vertebrae and right clavicle, with limited and painful range of motion on the right shoulder was noted. Other findings were normal. After primary and secondary survey radiological tests were ordered. Computerized tomography of cranium, cervical spine and thorax were only remarkable for fracture in the ramus of the left mandible and C5 and C6 vertebral bodies, irregularity in the right sternoclavicular junction, fracture in the right clavicle, and a metallic foreign body at the same level anteroinferior to clavicle. Doppler USG of carotid and vertebral arteries revealed a 2.5 cm soft tissue hematoma on the left, all vascular structures were reported normal. The patient was hospitalized in ENT unit for possibility of airway obstruction. Cervical, clavicular and mandibular fractures were treated with conservative management. He was discharged on day-4. **DISCUSSION:** The bullet entered at the level of the left temporomandibular joint, changed direction after breaking the ramus of the mandible, damaging C5 and C6 vertebrae while traveling inferiorly and then headed to the right breaking the right clavicle and lodged in the subcutaneous tissue at the level of the second right rib without damaging any important vital

organs on its course. Unfortunately most cases are not as lucky as our patient.

R100) Voyvoda in Spain... : Emine Akinci¹, Figen Coskun¹, Yucel Yuzbasioglu¹, Mehmet Akif Karamercan¹, Hikmet Duymaz¹, Yavuz Katirci¹ : 1. emergency medicine, ankara egitim ve arastirma hastanesi, Ankara, Turkey.

BACKGROUND: Traumas with falling from height frequently involve complex and multiple organ injuries. We wish to present a case of blunt trauma related to falling from height and a rare sacral fracture caused by a penetrating trauma. **CASE:** A 29 year-old male was brought to the emergency room after falling onto an iron pile from a height of 3 meters. The iron pile inserted to the right gluteus maximus from the upper lateral direction and was removed by the family of the patient. Vital signs of the patient were stable, and head, cervical, thoracic, abdominal and vertebral examination findings were normal. There was a cut involving the skin and subcutaneous tissue over the right gluteus about 1cm in length. Rectum was intact on rectal digital examination and there was no blood. Sphincter tone was normal. There was pain with compression in the pelvic examination; however, there was no instability. Extremities were normal; there was right-sided pain with movement. Pulses were patent and power and strength examination gave normal results. Hemogram and urinalysis were normal in laboratory examinations. No pathologies were found in cervical and PC lung x-rays, which we evaluate routinely in major traumas. Two-way thoracic and X-rays were normal. There were overt fracture lines in pelvic AP and lateral graphs. Fragmented fracture lines were observed in the inferior right wing of the sacrum in the pelvic CT ordered upon the continuance of suspicion for pelvic fracture. Air densities and minimal fluid was present at this level. In addition, air densities were present in both gluteal regions in subcutaneous tissue and between gluteal muscles. No retroperitoneal bleeding was found. The patient was admitted to orthopedics service with sacral fracture related to penetrating trauma. The patient was observed conservatively and discharged with no sequela on day 5 after admission. **DISCUSSION:** Sacral fractures caused by penetrating traumas are reported rarely in the literature. Plain radiographs may not suffice in this type of patients. CT is valuable in these type of cases as regards directing the diagnosis and treatment.

R101) Management of Severe Trauma Patients in Hospital Emergency Departments : Jose Minguéz¹, Pedro Garcia¹, Javier Millan², Jose Luis Ruiz¹, Maria Jesus Ripoll¹, Maria Luisa Tarraso¹ : 1. Hospital de la Ribera, Alzira, Valencia, Spain. 2. Hospital Lluís Alcanyis, Xativa, Valencia, Spain.

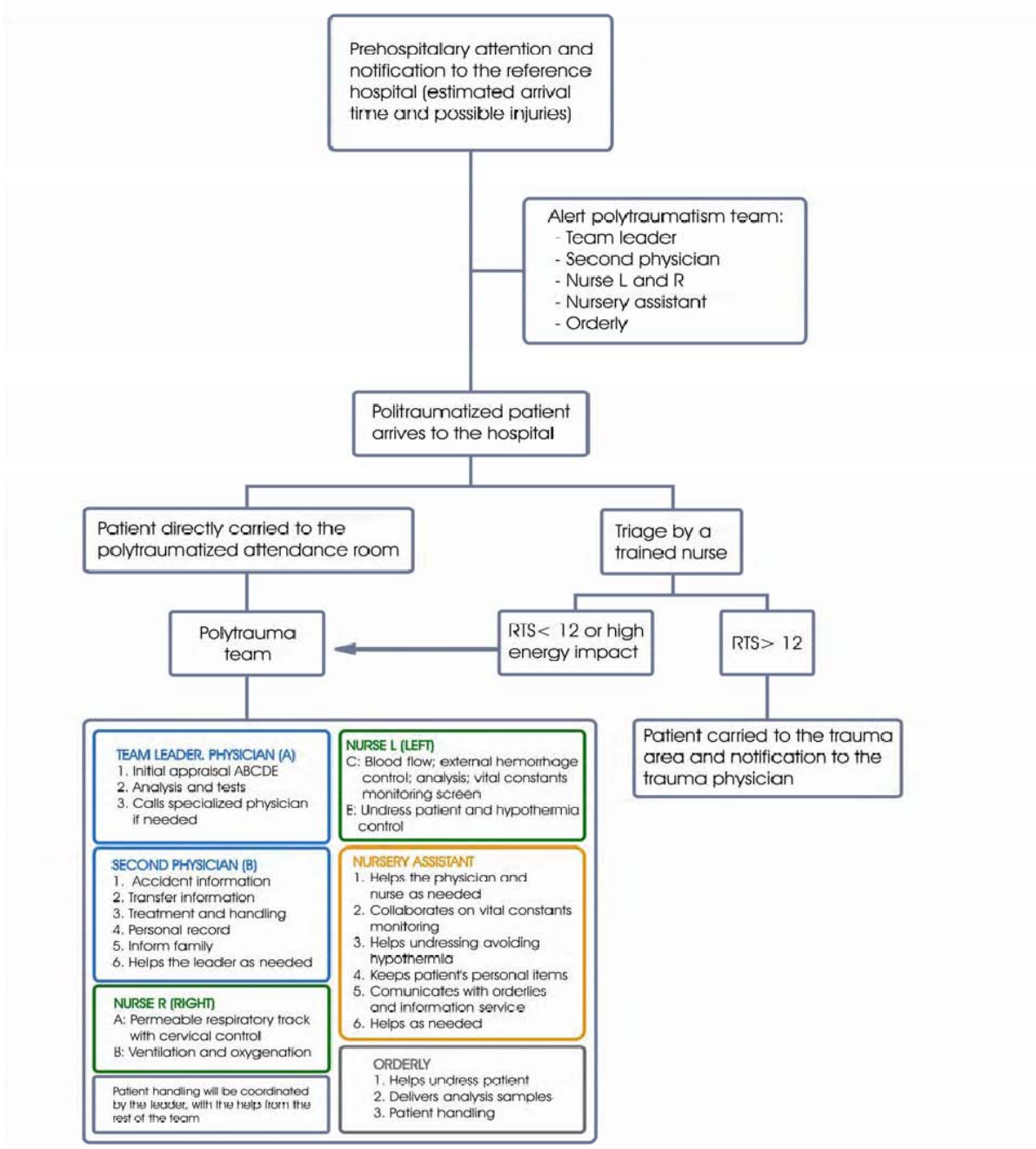
INTRODUCTION: Trauma, represents in our times, the leading cause of death during the first four decades of life. We review the current management of the critical patient and study the possibilities of improvement whenever needed and wherever possible. **METHODS:** Multicenter study encompassing all the hospitals in the Community. A closed-question survey questionnaire was prepared regarding the attention to critical patients, which was mailed to the various hospital emergency departments (EDs). Data acquisition and processing was carried out using statistical models with assessment of the results. **RESULTS:** An admission registry for severe trauma cases is available in 61% of the emergency departments in the community. The greatest number of polytrauma cases corresponds to traffic accidents (40%). In 61% of the

centres surveyed it is the emergency physician who is responsible for the observation and evolutive control of the cases. Among the EDs surveyed 33% did not have, within their own structural unit, a capability for attending to multiple victims at risk of death. As regards material and equipment availability, 23.8% of the hospital EDs did not have available, at the time of the survey, a Philadelphia neck support. In 85% of the surveyed EDs blood counts, blood biochemistries and coagulation tests are routinely requested on admission, while only one-quarter requests toxicologic tests per protocol (with a positivity rate of 25-50%). X-ray examinations are protocolised in over 90% of the surveyed EDs. As for the training of the professionals in the EDs, frequent training and/or update courses are carried out in 15% of the centres, while 90% of all hospital centres surveyed are accredited for docency by the Ministry of Health and Consumer Affairs at the present time. **CONCLUSIONS:** Even though the role of the hospital EDs in the integrated plan for care of the polytrauma patient is evident, our study has detected an appreciable lack of coordination in the hospital admission of the polytrauma patient.

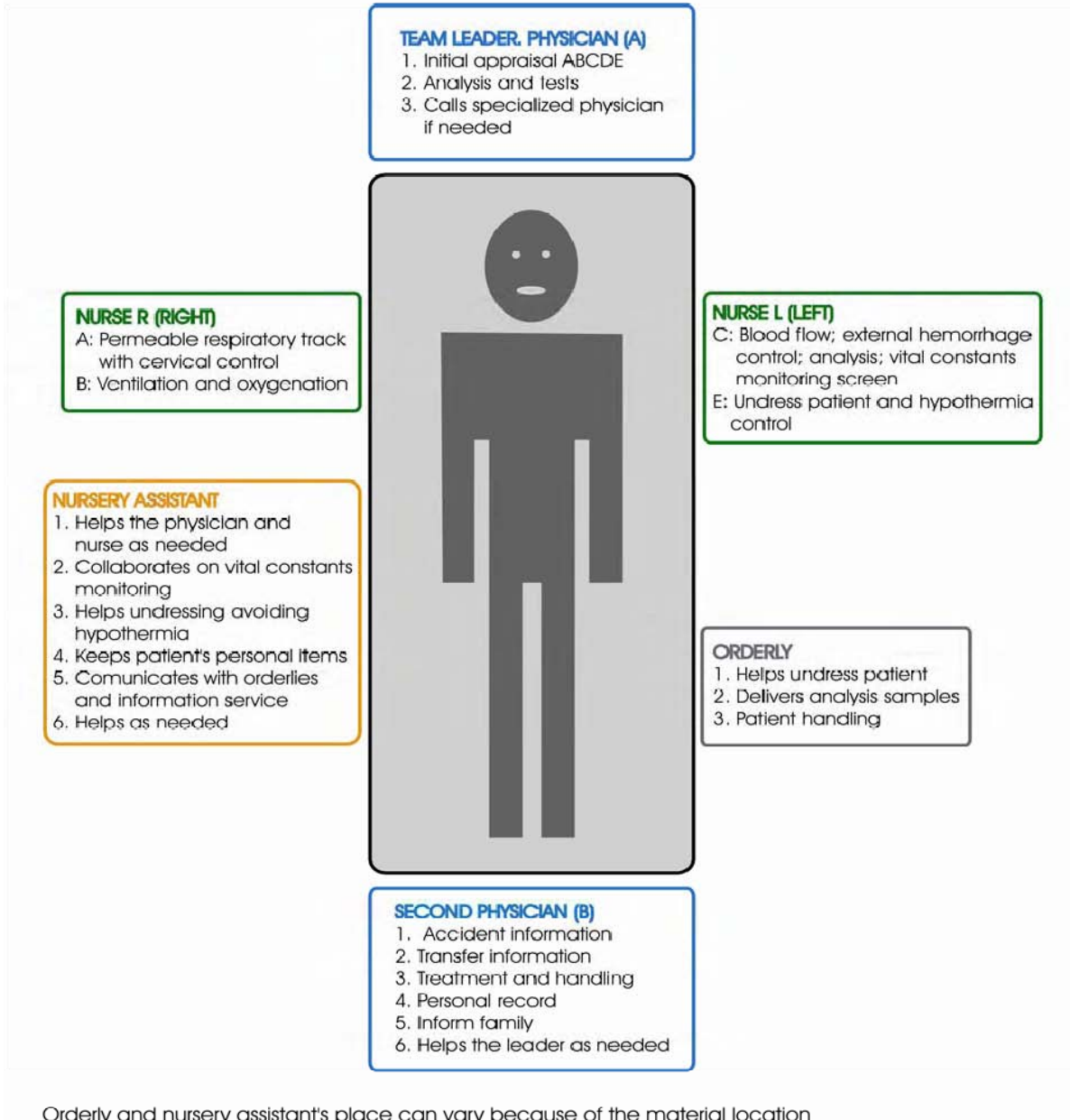
R102) Emergency Trauma Team: Organization of an emergency area to attend to the trauma patient : Antonio Noval¹, Alberto Purriños González¹, Carmen Delia Quintana Rodríguez¹, Caritina Martín Alonso¹, Luis López Alva¹, Nicolas Gómez Bolaños¹ : 1. Servicio Canario de Salud, Las Palmas de Gran Canaria, Las Palmas, Spain.

BACKGROUND: Trauma, one of the most important health problems worldwide, is a significant cause of morbidity and mortality, and it is expected to grow in the future. The correct management of the trauma patient is a great challenge and the proper organization of a team in charge of them helps to achieve better results in attendance and survival.

DISCUSSION: Due to years of polytrauma patients attendance we have acquired a team pattern for trauma patients attendance, composed of a group of experienced physicians and nurses with specific knowledge and training in handling, diagnosing and treatment of these patients. The team is designated daily (every team member knows what work is required of them as their duty begins). It's composed of six emergency department members. A physician leads the attendance, a second physician helps the leader in whatever is necessary and gathers all the information related to the accident and the transfer to the hospital, two nurses with specific functions, a nursery assistant and an orderly, both with specific handling training helps the nurses and physicians as needed. There are specific documents and work system. A triage is done as soon as the patient arrives. If the patient arrives in an ambulance with a physician his/her medical criteria is accepted as triage, otherwise it would be done immediately by a nurse rating the trauma score and considering the trauma mechanism. The patient is transported directly to the trauma emergency area if RTS is below 12 or if the accident mechanism suggests high energy impact or severe injury. If RTS is over 12 the trauma physician is informed and will take care of the patient in the trauma area. There is a specific medical history that achieves two purposes: gathers the data and guides the attendance in order not to miss any main item in the examination (primary and secondary survey). A nurse record gathers the essential parameters for the attendance as long as the patient remains in the emergency department.

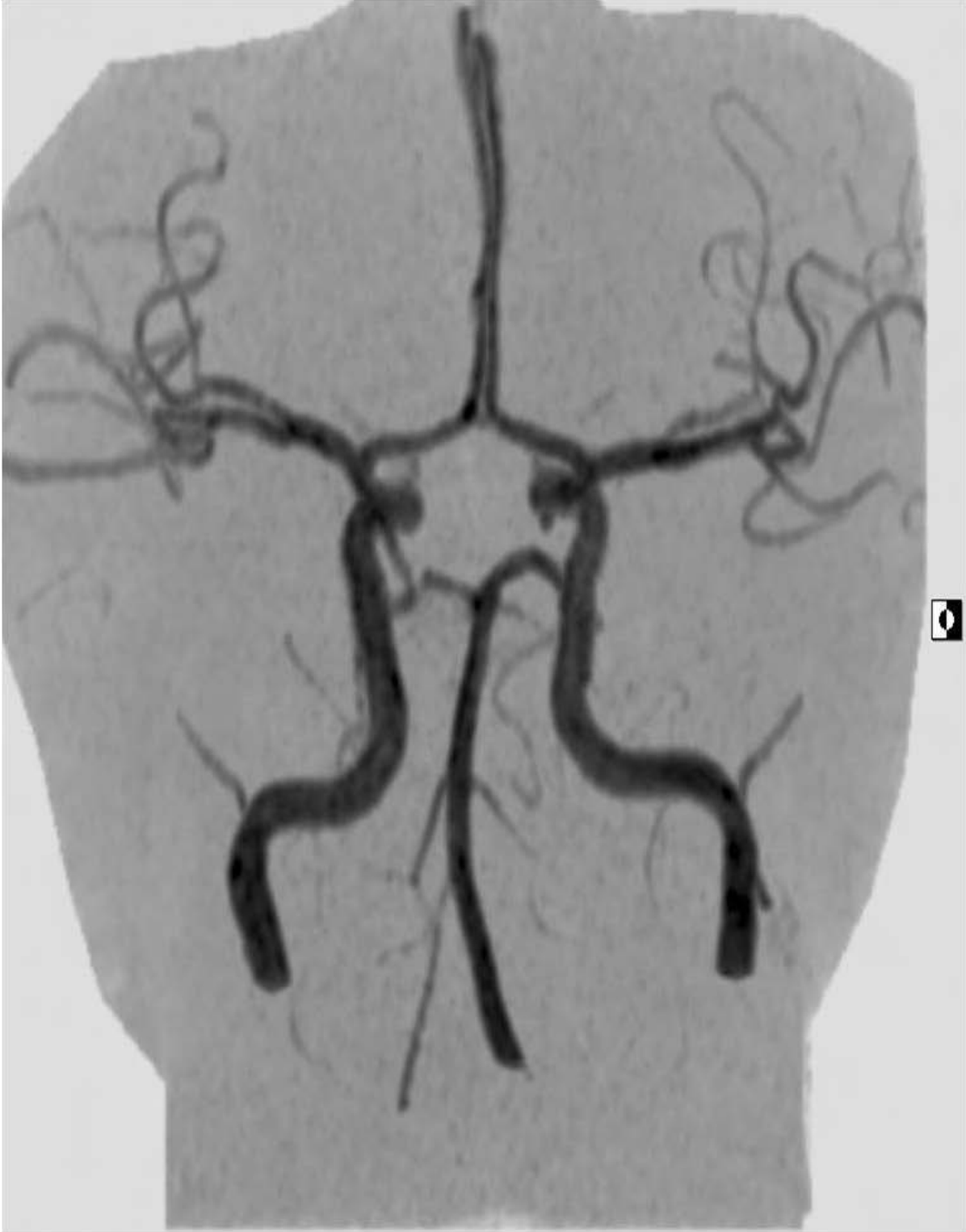


POLYTRAUMA TEAM POSITIONS



R103) Lateral Medullary Syndrome Following a Head Injury in an Elite Professional Rugby League Player : Brian J. Burns¹, Louise Allport², Lynette Masters² : 1. Sutherland Hospital, Sydney, NSW, Australia. 2. St. George Hospital, Sydney, NSW, Australia.

BACKGROUND: This is the first reported case of acute lateral medullary syndrome in an elite professional rugby league player. **CASE:** A 19 year old was tackled by 3 players causing a minor head injury with neck hyperextension and rotation. After the game he reported headaches, vomiting, hiccoughs, dysphagia, blurred vision, decreased thermal and pain sensation over the left side of his body. Two days later he was referred to the Emergency Department. Vital signs were normal. Cranial nerve examination showed uvular deviation to the left with decreased elevation of the right palatal arch and partial right Horner's syndrome. He had decreased temperature and pinprick sensation of the left arm and trunk. CT/CT angiogram of the brain demonstrated a non-dominant right vertebral artery with distal attenuation of the intracranial portion, but no definite dissection flap was identified. MRI/MRA demonstrated a dominant left vertebral artery (fig. 1). The right vertebral artery was smaller in calibre with minor luminal irregularity. An acute right lateral medullary infarct was demonstrated (fig 2). He was admitted to the stroke unit and placed on aspirin and clopidogrel. He was discharged on aspirin and clopidogrel for 3 months. He was advised to continue aspirin for 12 months thereafter. He was told to avoid heavy exercise for 3 months and contact sport for a minimum of 1 year. **DISCUSSION:** This syndrome follows occlusion of the vertebral artery and/or the posterior inferior cerebellar artery (PICA). This results in dorsolateral medullary infarction. The anatomical course the vertebral artery renders it susceptible to insult from apparently insignificant sports injuries. High clinical suspicion and early treatment is necessary to prevent further disability.



MRA brain demonstrating a dominant left vertebral artery. The cervical and intracranial right vertebral artery was smaller in calibre (hypoplastic) with minor luminal irregularity



MRI brain displaying acute right lateral medullary infarct.

R104) Psychological effects of child physical trauma : Dinas Vaitkaitis¹, Edita Albaviciute², Egle Vaitkaitiene², Kestutis Stasaitis¹ : 1. Kaunas University of Medicine, Kaunas, Lithuania. 2. Biomedical Research Institute of Kaunas Medical University, Kaunas, Lithuania.

INTRODUCTION: The aim of our study was to evaluate the well-being of children and change of their parents life after child physical trauma treated in Kaunas University Hospital.

METHODS: Physical and psychosocial behavior of children after trauma, behavior of their parents and posttraumatic stress disorders were evaluated using two questionnaires: "Parents' questionnaire about child trauma", "Child questionnaire about trauma" and two scales: "Posttraumatic stress symptom scale", "Impact of event scale". Subjects of the study: 7-18 years old children after severe limb and trunk injuries (except head and spinal injury) treated at the department of orthopedic surgery of Kaunas University Hospital from September 2007 till March 2008. **RESULTS:** 68 children and 55 parents of them gave informed consent and responded to the questionnaires. 60% of respondents were boys, 40% girls. 44% of trauma causes were traffic accidents, 22% - sports injuries, 18% - home and leisure injuries, 9% - school injuries and 7% - other. Evaluating results of the IES we found differences between boys and girls: girls suffered psychologically more than boys because of renewing memories and images about the event. Comparing these results to parents' answers using posttraumatic stress scale we noticed that girls had, more often than boys, fear of trauma event, anxiety, nightmares, they were afraid of the future. Fast mood exchange between both sexes was similar. 73.1% of girls and 41% of boys monitored the link between today's mood and trauma ($p<0.05$). Answers of parents were very different from children: in their opinion boys had worse mood than they monitored, girls mood was monitored the same way. Parents suffered their own health and social problems because of child trauma: 50% of parents had headaches, 38% had heart complaints. 64% of parents could not work their normal working day.

CONCLUSIONS: Trauma influences the emotional state of children. Girls were more often than boys suffering from renewing memories and images about the trauma. Child's trauma has influence on the parents health and ability to work.

R105) Mediastinal Mass Coincidentally Identified After Motor Vehicle Accident : Recep Demirhan¹, Mehmet Unaldi¹, Ozgür Sogüt², Mustafa Burak Sayhan³ : 1. Kartal Education and Research Hospital, Department of Emergency Medicine, Istanbul, Turkey. 2. University of Harran, Department of Emergency Department, Sanliurfa, Turkey. 3. Selimiye State Hospital, Department of Emergency Medicine, Edirne, Turkey.

BACKGROUND: This case report was presented to emphasize routine x-rays in trauma patients, because the diagnosis of a mediastinal mass in the right lung x-ray was established in a patient who came to the emergency department after a traffic accident in vehicle. **CASE:** A 60 years-old, male patient was admitted to our emergency department owing to motor vehicle accident. Upon physical examination his breath sounds couldn't be heard on the lower zone of right lung. Chest x-ray of the patient was evaluated and a 15x8 centimeters homogeneous circular increased density on the right lung was noted. Thoracic computerized tomography

confirmed a mediastinal mass in the right lung. The patient was then, hospitalized in thoracic surgery department together with anterior mediastinal mass and organized hematoma diagnoses with taken into consideration diaphragm hernia in differential diagnosis. After tumour excision was done in operation, the patient was discharged on the third day, post-surgery.

DISCUSSION: Some diseases can be identified coincidental without clinical symptoms in trauma patients. This patient was exposed to a traffic accident that had provided the opportunity to make us aware of a mediastinal mass. On the other hand, the x-rays are rather important in trauma patients about diagnosis.

R106) Chest Injuries in Children: an Indicator of Increased Morbidity and Mortality : Recep Demirhan¹, Mehmet Unaldi¹, Burak Onan¹ : 1. Kartal Education and Research Hospital, Emergency Department, Istanbul, Turkey.

INTRODUCTION: Chest injury is one of the leading causes of morbidity and mortality in developing countries. In this retrospective study, we evaluated chest injuries in children with respect to etiologic causes, other system injuries accompanying to chest trauma, methods and outcome in the management and prognostic factors affecting the need for thoracotomy, morbidity, and mortality. **METHODS:** A retrospective evaluation was performed on 211 patients (130 males (61%) and 81 females (39%)) with a mean age of 8 years (ranging between 1 and 14 years), who were admitted with chest injury to emergency clinic of our hospital, which is a level-I trauma center covering a big area in Istanbul, Turkey between July 1999 and May 2009. **RESULTS:** The most common cause of thoracic injuries was motor vehicle accidents, followed by falls. In the etiology, blunt and penetrating injuries were diagnosed in 157 (75%) and 54 (25%) patients, respectively. Blunt chest injury was more frequent in cases between 4 and 8 years of age, whereas penetrating injury was common between 11 and 15 years. Isolated chest injuries was evident in 85 (40%) cases. Associated injuries were diagnosed in 126 (60%) patients. Extremity and abdominal injuries were the most frequently seen associated injuries. Forty-six percent (21.8%) of patients presented with hypotension. On admission, blood tests revealed mean white blood cell count of 14.330 ± 6.2 ($8-28 \times 10^3/Ul$). With regard to the treatment, symptomatic conservative management was satisfactory in 124 (58%) cases, but tube thoracostomy and thoracotomy were performed in 87 (41%) and 16 (7.5%) patients, respectively. A morbidity was seen in 32 (15,1%) patients in the follow-up period. Mortality rate was 5.2%.

CONCLUSION: High white blood cell count, three or more rib fractures, and accompanying other systems injuries were determined as the prognostic factors affecting the morbidity and mortality in pediatric patients with chest injury.

R107) Foreign body in the anterior mediastinum: case report : Larocca Michele¹, Gennaro Nasti¹, Luigi Maione¹ : 1. Ospedale di Lagonegro, Lagonegro, Italy.

CASE: The patient (M.D.) was a 52 years old female who came to our hospital after a job accident. While she was working with a lawn mower an iron struck her in the anterior part of the thorax. She arrived at the emergency room at 11.49 a.m. transferred by another hospital via ambulance where she had received a chest X ray that evidenced a foreign body in the anterior

mediastinum. The patient was in good general condition, hemodynamically stable. BP 120/80 PR 94 O2= 98% Pulmonary examination was normal. No jugular tension. Trachea was normal. No signs of haemo-pericardium

CT of the Thorax: in the superior–anterior part of the mediastinum there was evidence of a metallic foreign body of few millimeters of diameter that crossed the sternum and it extended from the posterior border of the sternum to the anterior wall of the thoracic aorta (length 22 mm). The patient was immediately referred to the ward of cardiosurgery in Potenza by Elycopter and she underwent surgical intervention (left thoracotomy and removal of the metallic foreign body).

R108) Management of an emergency: Patients with dental problems : Bohm Choi¹, Yeon Young Kyong¹, Sun Sook Bae¹, Won Lee¹ : 1. Dentistry, The catholic University, Uijeong bu , kyung ki do, Korea, South.

BACKGROUND: Visits to the Emergency Department(ED) for dental problems are very common. Although few life-threatening dental emergencies occur, oral and dental complaints usually result in visits to the ED. Dental emergencies generally can be divided into three categories: (1) orofacial trauma, (2) orofacial pain (contained toothache), and (3) oral bleeding problem. When the emergency physicians recognize the appropriate oral pathology, they can manage most of the problems. Hence, this study demonstrates the management of an emergency patient in the dentist’s perspective. First, (1) orofacial trauma can be subdivided into four categories: 1. fracture of maxilla and/or mandible 2. tooth fracture: crown fracture/root fracture 3. tooth luxation 4. oral cavity laceration. For the second, orofacial pain, Carlos et al represent ED visits for dental problems of nontraumatic origin associated with periapical abscess and toothache (56%). The great majority (78%) were triaged as nonurgent, and most (93%) were discharged home. But ED doctors must not miss cases with periapical abscess as they can progress rapidly and extend into the parapharyngeal space. Finally (3) the oral bleeding problem. Spontaneous bleeding relates to extraction, scaling or curettage. Also, a careful medical history must be obtained because systemic disease such as clotting factor deficiencies and leukemia may result in hypocoagulability and spontaneous bleeding.

DISCUSSION: The main purpose of this study is to present some basic dental knowledge about the management of patients with dental problems, systematize the classification and treatment of emergency patients from a dental perspective, and suggest ways of application to the emergency medical system.

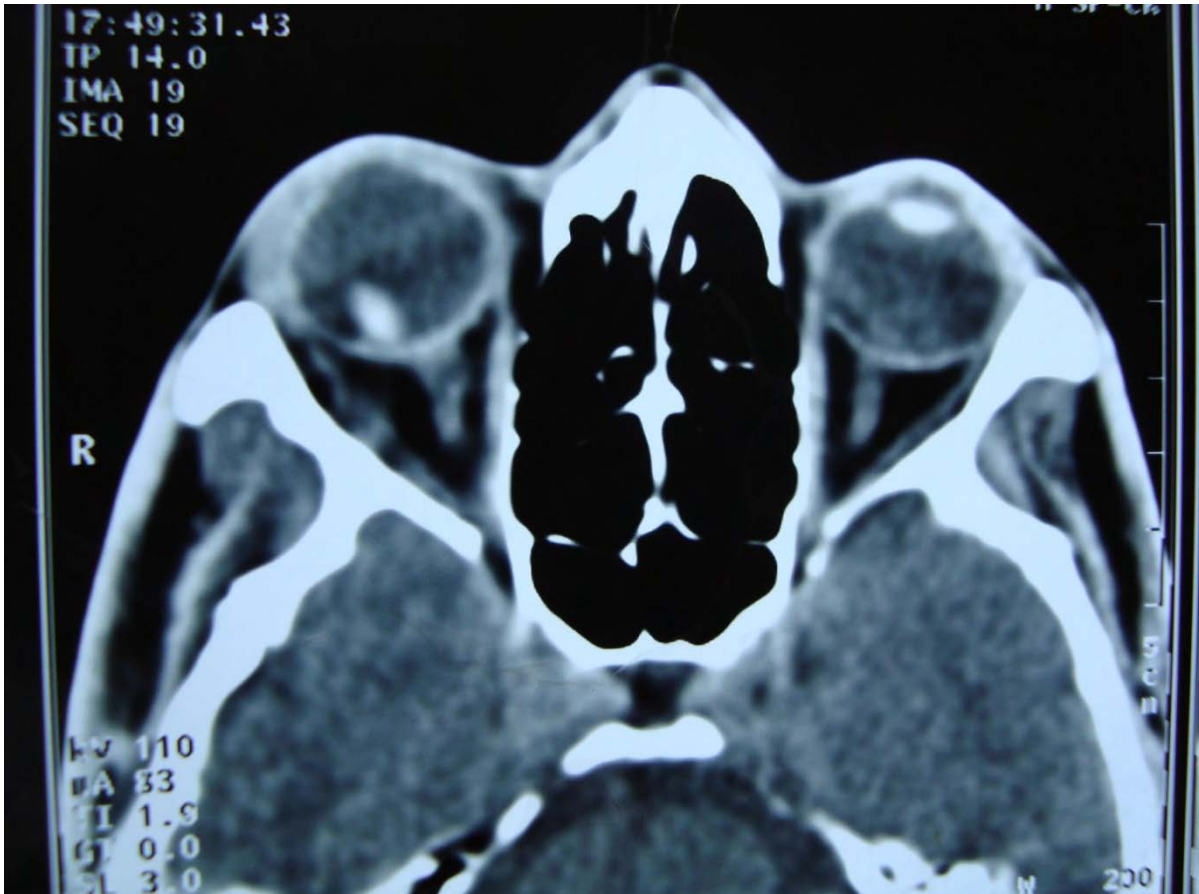
R109) Penetrating Chest Trauma : Popescu Puiu², Farchescu G. Lavinia¹ : 1. Clinical Emergency County Hospital , Targu Mures, Romania. 2. SMURD, Targu Mures, Romania.

BACKGROUND: The patients, victims of a road accidents, represent a challenge for the emergency physician in the pre-hospital setting due to the severity of injuries that usually require an multidisciplinary intervention. The mortality due to direct thoracic trauma represents 20-25% of the total mortality in trauma, due to increased percentage of lesions that can alter vital systems: cardiovascular and respiratory. **CASE:** We present the unusual case of a 29-year old woman, the victim of an accident, who had penetrating thoracic trauma and retention of the foreign body, a board with about the length of 1m and 15 cm width, through the left hemithorax. The victim was taken in critical condition and transferred by helicopter to the Trauma Center. In the place of intervention the patient was evaluated, monitored, hemodynamically stabilized and she was orotracheally intubated in the right lung and mechanically ventilated. In the emergency department she was given antibiotic and antitetanic therapy to avoid infectious complications. Preoperative it was not possible to perform a chest X-ray or CT-scanning because of the size of the foreign body and to avoid handling it. The patient was quickly taken to the operations room. Surgeons performed a thoracotomy with extraction of foreign body, finding the damages at the ribs, pleura, lungs, spleen and skirt. Postoperative she was transferred to the intensive care unit where she was still mechanically ventilated for 3 more days then extubated and received the liquid, the antibiotics and preparations of blood. The evolution was favorable and the patient was discharged after 3 weeks of hospitalization. **DISCUSSION:** Penetrating chest traumas are severe and life-threatening for the victims. Correct and rapid management at the scene and transportation without handling the foreign body leads to the survival of these victims. Generally, the position of the object should remain unchanged until the patient reaches the operating room. Pre-hospital intervention through transportation by helicopter shortens time of arrival of these victims. In this case, the accident took place at 100 km from the Trauma Center and the operation lasted 90 minute.

R110) Posterior Lens Dislocation Due To Blunt Ocular Trauma: Case Report : Mustafa Ipek¹, Deniz Oray¹, Ozge D. Atilla¹, Tolga Uslu¹ : 1. Emergency Medicine, Tepecik Research and Training Hospital, Izmir, Turkey.

BACKGROUND: Lens dislocation is an uncommon condition in which the anatomical position of the lens is entirely degenerated, mostly due to trauma. It can present with loss of sight, cataract, hyphema, intravitreal bleeding, detachment of retina, uveitis and glaucoma. We aimed to remind providers of the lens dislocation which can cause serious complications if not realized, as well as describe our approach in the emergency service to this blunt trauma case. **CASE:** A 31 years old male patient presented to our emergency service after suffering blunt trauma (stuck by an iron bar to his right eye) with complaints of pain and blood stained. On physical examination he had midriasis, conjunctival incision, conjunctival hyperemia, conjunctival incision, erosion at central cornea and chemosis of the same eye (figure 1). There was loss of sight in the visual area of the right eye lateral and lack of light reflection on the same side. On orbital tomography we diagnosed in the right orbit the lens was dislocated posteriorly and the structure of the globe was intact (figure 2). Following our diagnosis of lens dislocation the patient underwent operation for lens extraction purposes. **DISCUSSION:** It has been suggested that the duration of lens dislocations from trauma to surgery stages can range

from 3 days to 12 years. The most important reason for such time differences and delays are late presentations of the patients by reason of glaucoma or progressive loss of sight. Further, in our patient, delay might be caused by missing the lens dislocation by the reason of focusing on the conjunctival incision. However detailed physical examination has achieved an early diagnosis of the lens dislocation. The lens dislocation should be considered in distinctive diagnosis related the patients of blunt ocular trauma. That means the detailed and complete physical examination is most important in blunt traumas.



R111) Hemostatic effect of “oxidised cellulose” (Bloodcare) powder in a rat model with femoral artery bleeding : Ozgur Dikme¹, Gurkan Ersoy¹, Osman Yilmaz², Ozlem Akinci¹, Necati Gokmen³ : 1. University of Dokuz Eylul, School of Medicine, Department of Emergency Medicine, Izmir, Turkey. 2. University of

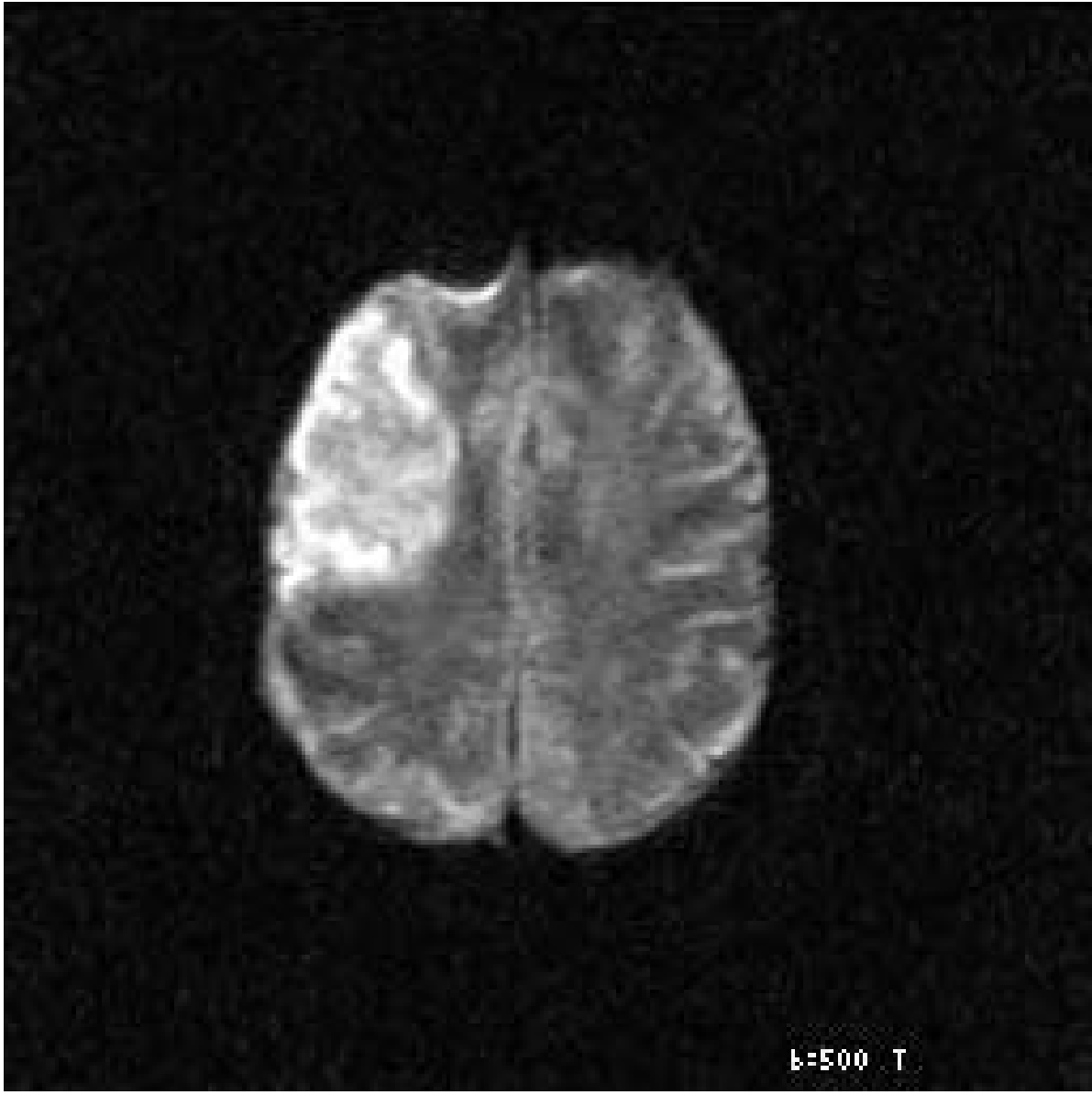
Dokuz Eylul, School of Medicine, Department of Laboratory and Experimental Animals, Izmir, Turkey. 3. University of Dokuz Eylul, School of Medicine, Department of Anesthesiology and Reanimation, Izmir, Turkey.

INTRODUCTION: Our objective was to investigate the hemostatic effect of “local oxidised cellulose” (OC) powder on a rat model with femoral artery bleeding. **METHODS:** We used 22 gauge branule in order to perforate the femoral artery of 10 wistar albino rats under ether anesthesia. Later they were randomized to control (standard scale weight) and study groups (standard scale weight and OC). In the study group, OC (0.5 g) was poured onto the bleeding site and a mass was placed on it. At the first minute, the mass was removed and assessment of hemostasis was performed. If the bleeding ceased at this moment the test was scored as “passed at first minute”. If not, an additional and same quantity of OC and same amount of compression was reapplied until the second and fourth minutes in a similar way. The similar sequence of trials were performed in the control group without OC. The difference between bleeding periods in two groups was observed. **RESULTS:** Bleeding stopped at the second minute in two of five rats and at the fourth minute in three of five rats in the study group. However hemostasis was not achieved either at the fourth minute in the control group. Differences between the two groups was statistically significant ($p=0.004$). **CONCLUSION:** Application of OC powder and a standard level of compression (achieved with a scale weight) significantly decreased the time of hemostasis here in this rat model with femoral arterial bleeding.

R112) Post-Traumatic Cerebral Infarction : Seong-Jung Kim¹, Dong-hyeon Lee¹, Sun-Pyo Kim¹, Soo-hyung Cho¹, Nam-soo Cho¹ : 1. Emergency medicine, Chosun Univ. Hospital, Gwangju, Korea, South.

BACKGROUND: Cerebral infarction is an ischemic condition of the brain, causing a persistent focal neurological deficit in the area affected. Its common causes include the disorders predisposing to transient ischemic attacks and atherosclerosis of cerebral arteries. Now we report two cases of cerebral infarction caused by trauma, not originated as medical diseases. **CASES:** Case 1 - A 57 year old man came to our hospital with multiple trauma due to bicycle to car accident. His initial vital signs were stable but mental status was drowsy. We diagnosed him with left multiple rib fractures with hemothorax, T10 burst fracture, liver laceration, bilateral renal contusion, but we found his brain CT as nonspecific. After 15 hours, left hemiplegia and right neck deviation symptoms were noted, so we checked MRI and MR angiography. The result was right middle meningeal arterial territory infarction. Case 2 - A 68 year old man presented after a pedestrian traffic accident. His symptoms were just headache and dizziness. An initial brain CT was nonspecific. After two hospital days, he complained about left facial palsy. Then we checked brain angiography. The result was right middle meningeal arterial territory infarction. Finally, we applied transcatheter intravascular stent insertion and his symptoms got well. **DISCUSSION:** Because post-traumatic cerebral infarction is not a common disease, we may have missed it. But the sequelae is likely to become permanent. If your patient has symptoms that are suspicious for cerebral infarction, although their initial brain CT is nonspecific, you should have a brain arteriography as fast as

possible.





R113) Hemostatic effect of microporous polysaccharide hemisphere (MPH)'' in a heparinized rat model with femoral artery bleeding : Asli Aydinoglu¹, Gurkan Ersoy¹, Alper Dogan³, Huriye Akay¹, Osman Yilmaz², Necati Gokmen³ : 1. University of Dokuz Eylul, School of Medicine, Department of Emergency Medicine, Izmir, Turkey. 2. University of Dokuz Eylul, School Of Medicine, Department of Laboratory Research Animals, Izmir, Balçova, Turkey. 3. University of Dokuz Eylul, School Of Medicine, Department of Anesthesiology and Reanimation, Izmir, Balçova, Turkey.

INTRODUCTION: Our objective was to investigate the hemostatic effect of microporous

polysaccharide hemosphere (MPH) in a heparinized rat model with femoral artery bleeding. **METHODS:** Ten wistar rats were anesthetized and heparinised before the femoral artery was pierced to initiate bleeding. Rats were then randomized to control and study groups. MPH was poured into the bleeding site and a mass was placed on it. After 30 seconds, the mass was removed and assessment of hemostasis was performed. If bleeding ceased the test was scored as “passed at 30 seconds”. If not, an additional dose of MPH and compression was reapplied for an additional 30 seconds. If bleeding stopped after the second application, the test was scored as “passed at 60 seconds”. If not, the same procedure was repeated for the last additional 30 seconds. If bleeding stopped now the test was scored as passed at 90 seconds. Similar sequence of trials was done in the control group but without MPH. The difference between bleeding periods in two groups was observed. **RESULTS:** Application of MPH resulted in complete cessation of bleeding in four of five and one of five rats at 60 and 90 seconds, respectively. In the control group hemostasis could not be achieved in all five rats, even at 90 seconds. The statistical difference between the groups was significant ($p < 0.05$). **CONCLUSIONS:** Application of MPH and compression with a scale weight significantly decreased the time of hemostasis in a heparinized rat model with femoral arterial bleeding.

R114) An Interesting Case of Penetrating Head Trauma : Emine Akinci¹, Figen Coskun¹, Hatice Ozdemir¹, Dilber Ucoz¹, Mirac Ozturk¹ : 1. emergency medicine, ankara egitim ve arastirma hastanesi, Ankara, Turkey.

BACKGROUND: Although penetrating head traumas are among the traumas with the highest mortality and morbidity rates, with rapid and correct interventions, some cases can heal surprisingly well without any sequela. **CASE:** A 42 year-old male presented to the emergency room with a piece of iron stabbed in his neck. Two pieces of iron fell onto the patient's head from a height of 10 meters, and he fell down and hit his head. His general health status was good, conscious, alert and oriented to surroundings and he was cooperating. GCS was 15 and pupils were isochoric, there were no motor or sensory deficits; there were two iron bars stabbed in the posterior midline with oblique positions, and vertebrae were sensitive to touch. Stabilization of the patient with a cervical collar was impossible to place and was ensured with the help of two assistants. There was one laceration of 4x2cm in the right infraorbital area resembling a triangular flap, and another lacerated area 1cm in diameter in the right supraorbital area. Examinations of other systems were normal. In the cervical, orbital and brain CTs, the foreign body that had entered the left occiput passed through the facet joint of the C2 vertebra inferiorly and extended to the right anterior neighborhood of the C3 body. There were millimetric air densities in the soft tissue along the track of the metallic body extending to the right paratracheal soft tissues; there was a suspicious fracture line on the posterior spinous process of the C2 vertebral body; and millimetric air was observed at the C1-C3 vertebral level within the spinal canal. Cranial and cervical CT angiograms were normal. Neurosurgery and plastic surgery were consulted for the patient and he was admitted to neurosurgery for surgery. He underwent operation and foreign bodies removal. He was followed in ICU and was discharged on the fifth day of admission with no sequela. **DISCUSSION:** In penetrating traumas, removal of the foreign bodies under operating room conditions after delivering the patients to the hospital with absolute immobilization without removing the foreign bodies can

be life-saving.

R115) A Case of Pseudoaneurysm of innominate artery after blunt chest trauma : Yeon Young Kyong¹ : 1. Emergency Medicine, The catholic university of Korea, Gyeonggi Do, Korea, South.

Introduction We report a fatal case with a rupture of innominate artery after a blunt trauma in thorax. **Case Report** A 49-years-old male presented to ER with chest discomfort and hoarseness for 1 week. He received a operation for clavicle fracture 2 years ago and had a blunt trauma on chest 1 month ago. The initial vital sign were as stable. On chest auscultation coarse breathing sound and rale were found and no palpating mass or tenderness on neck and chest were found. Laboratory findings and blood gas analysis were normal. oxygen saturation was 97.3%. The chest x-ray showed mass lesion on right upper lung field and ECG were normal. After 4 hours later the result of Chest CT showed Bovine anomaly combined with rupture of innominate artery therefore we consulted the patient to chest surgeon. After 10 hours later the patient suddenly showed decreased mental status and dyspnea. The following blood gas analysis showed mild metabolic acidosis. The size of pseudoaneurysm increased after rupture and depressed the airway, so we intubated the patient and emergency operation was enhanced. After emergency operation he discharged 46days later. **Discussion** The most common aortic arch branching pattern in human consists of 3 great vessels originating from the arch of the aorta which is innominate artery, left subclavian artery and left common carotid artery. The Bovine anomaly is the second most common variant of aortic arch branching occurs when the left common carotid artery has a common origin with innominate artery. It is difficult to know precisely the mortality rate from these injuries because death usually results at the scene. Patients with innominate injuries most commonly complain of chest pain. This chest pain is generally anterior chest wall pain that is reproducible and nonspecific. Definite Diagnostic tool is CT, Transesophageal echocardiogram and Aortic Angiography and among these diagnostic tool the CT is most rapid and definite tool therefore we should consider it in first line. Observation is the treatment if the patient dose not have any symptoms or complication but if the patient has symptoms or complication occurs, operation is needed.

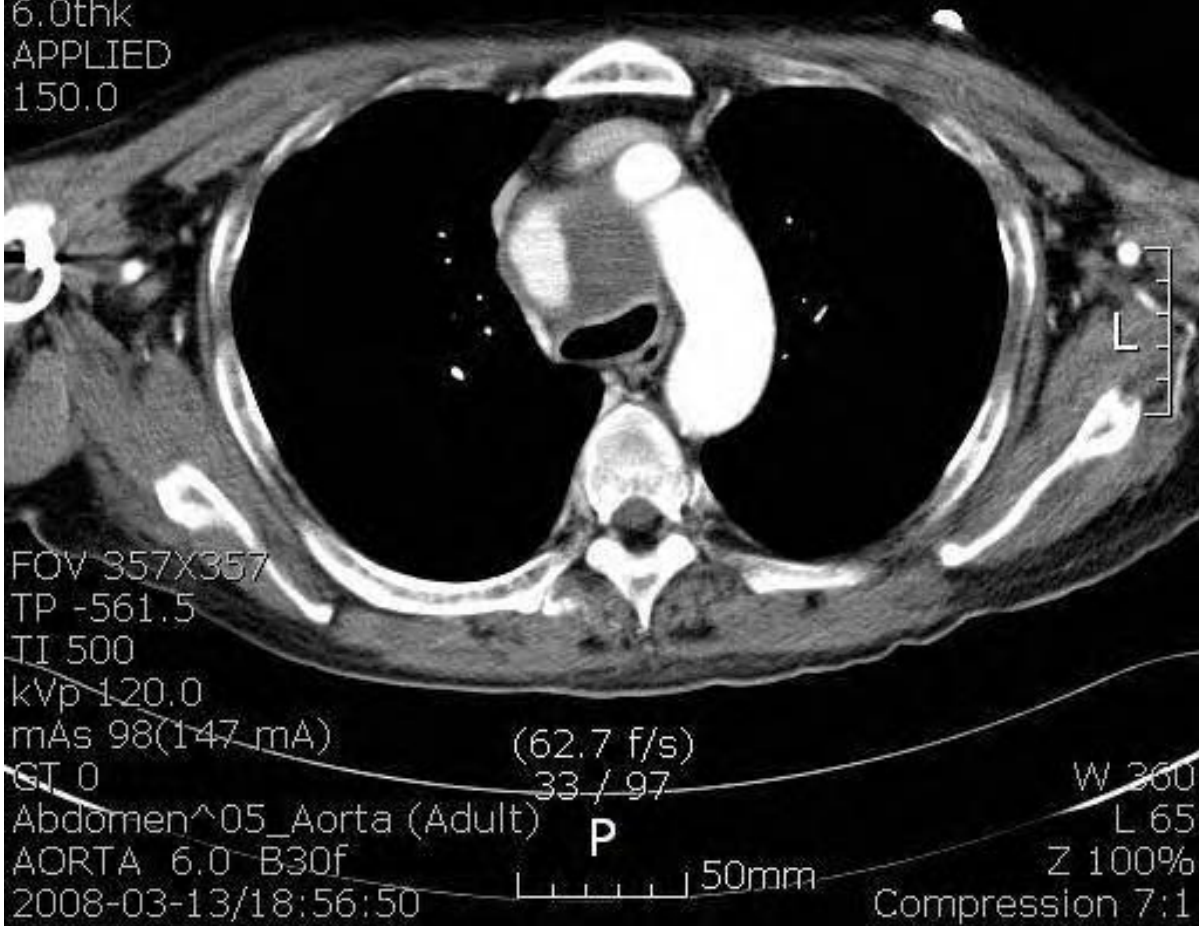


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R116) An Analysis on Factors Affecting Seriousness in Children with Multiple Trauma : Sun-Pyo Kim¹, Seong-Jung Kim¹, Soo-hyung Cho¹, Nam-soo Cho¹ : 1. Emergency medicine, Chosun Univ. Hospital, Gwangju, Korea, South.

INTRODUCTION: The authors conducted this study in order to help collect basic data to establish prevention strategies for patients with juvenile trauma and to understand early treatment needs and analyzing factors affecting seriousness and risk elements for children with

multiple trauma. **METHODS:** From January 1, 2007 to December 31, 2008, the cohort study was conducted with prospective data collection for the patients who visited the hospital because of multiple trauma among children under 14 years old at OO University Hospital, Republic of Korea. **RESULTS:** There were 182 multiple injured children who visited OO University Hospital Emergency Medical Center over the two years. Mechanisms of trauma were 67 automobile-related injury (36.5%), 43 plunge injuries (23.6%), 33 fall injuries (18.3%), and 39 others (19.6%). In the range of ages, 86.5% of the total children were under 9 years old, with an average age of 6.4 and gender ratio 1.6:1. In regards to types of causes of trauma, patients from pedestrian accidents were the most with 91 (50.2%). Most commonly accidents occurred on clear days; the time accidents take place was mostly ranged from 16 to 20. When injuries are classified by AIS body parts: head and neck 56; facial 43; chest 38; abdominal 36; pelvis and limbs 102 cases. Pelvis and limbs are the most common injuries, and 165 patients had more than 2 injuries, making up the vast majority. Among the sample, 24 (13.2%) died, and the deaths were most often caused by hypovolemic shock due to massive bleeding; the patients who had died within three days were 17. **CONCLUSION:** This study found risk factors in children with multiple trauma affecting seriousness of injury are children under 9 years old; injury taking place between hours 16 to 20 during the day; injury related to automobiles; pedestrian-automobile collisions; head and neck injury; in case that patient's consciousness is poor on hospital arrival; and the patient was without protecting equipment at all.

R117) Galeazzi's Fracture Secondary to a Fall on an Outstretched Arm : Lisa Moreno-Walton¹, Micelle Haydel¹ : 1. Emergency Medicine, Louisiana State University Health Sciences Center, New Orleans, LA, USA.

CASE: Chief Complaint: "I think my arm is dislocated." History of Present Illness: 24 year old male running from police jumped from the top of a fence, landing on his outstretched hand. Past Medical History is unremarkable, with no medications. He smokes two packs a day and uses both alcohol and marijuana. Vital Signs: Afebrile, respirations 18, heart rate 88, blood pressure 117/78

Physical Exam: Unremarkable except for abrasions to both knees and palms, a 3 cm laceration to the right mid-forearm from the wire fence, and the following left upper extremity findings: Swelling and deformity at the radial aspect of the distal third of the forearm; swelling of the ulnar aspect of the wrist; tenderness at both these areas. Skin is intact. Radial and ulnar pulses are palpable and there is one second capillary refill. There is decreased range of motion of wrist. Fingers are mobile and warm.

Xray: (We will show two views of Galeazzi's fracture.) **DISCUSSION:** This is a fracture of the junction of the middle and distal thirds of the radius with a dislocation or subluxation of the distal radio-ulnar joint. It is an unstable fracture due to the distracting pull of the brachioradialis and pronator quadratus muscles, and requires open reduction and internal fixation. On rare occasions, a closed reduction of the radius is possible if the fracture is very distal, but the dislocation can almost never be accomplished closed. Take home points: - A rare fracture, accounting for only 7% of forearm fractures. - Clinical exam is the key to recognizing the disruption of the radio-ulnar joint. - An ulnar styloid fracture is also seen in 60% of cases. - Complications include malunion and nonunion of the radius and recurrent dislocations of the

joint.





R118) Closed Reduction of Traumatic Anterior Dislocation of the Shoulder Using Chair Method : Selami Cakmak¹, Mahir Mahirogullari², Feridun Cilli², Mesih Kuskucu², Faruk Akyildiz² : 1. Aksaz Military Hospital, Mugla, Turkey. 2. GATA Haydarpasa Training Hospital, Istanbul, Turkey.

INTRODUCTION: Traumatic dislocations of the shoulder are one of the most common emergency pathologies. Reduction under anesthesia or sedation is an offered treatment method. Especially in military people, at the battle field or combat training area, reduction must be done

quickly and properly. Various methods previously described for reduction of shoulder dislocation including traction forces, lever-arm forces or both of them. The aim of this study was to attract attention and show how efficient the Chair technique is at reduction of traumatic shoulder dislocations. **METHODS:** Between 2007-2009 years, we treated 25 patients with traumatic anterior shoulder dislocation. **RESULTS:** Average age of patients was 23 (20-28). All patients' dislocations were reduced with Chair methods and anesthesia or sedation was not used. None of patients required open surgery or another closed reduction method. In all patients the results were successful. Average reduction time was 13 seconds (3 seconds-1 minute). Satisfaction of the patient is good with this method. **CONCLUSION.** The Chair method is easy and does not need any assistant. There have not been any complications noted in inexperienced hands. Chair method is practical, effective and reliable for reduction of anterior shoulder dislocations.

R119) Investigation of the Hemostatic Effectiveness of Linear Polymer Chitosan (Celox®) on an Experimental Rat Model of Warfarin and Hypothermia With Severe Femoral Artery Bleeding : Ozlem Koksali¹, Naciye Isbil Buyukcoskun², Betul Cam Etoz², Fatma Ozdemir¹ : 1. Uludag University Faculty of Medicine, Emergency Department, Bursa, Turkey. 2. Uludag University Faculty of Medicine, Physiology Department, Bursa, Turkey.

INTRODUCTION: Survival can be enhanced in trauma patients with uncontrolled hemorrhage by fast and effective intervention with hemostatic agents. In this study, the efficiency of a hemostatic agent Celox® was investigated in rats with a severe femoral artery bleeding model after creating hypothermia and giving an oral anticoagulating agent, Warfarin. **METHODS:** Sprague-Dowley female rats with mean weights of 200-350 g were used for the study. Six groups were composed as: normothermia + compression group 1), normothermia + Celox® (group 2), hypothermia + compression (group 3), hypothermia + Celox® (group 4), normothermia + Warfarin + compression (group 5) and normothermia + Warfarin + Celox® (group 6). The rats were monitored and physiologic parameters were recorded during the experiment and blood samples were collected before and after hemorrhage. **RESULTS:** The difference was statistically significant between normothermia + Celox® and normothermia + compression groups ($p=0.001$) with regards to hemorrhage control and time of compression and also between the groups of hypothermia + compression and hypothermia + Celox® ($p<0.05$). Mean hemostasis time for normothermia + compression and normothermia + Celox® groups were 90.00 ± 0.00 sec and 33.75 ± 10.60 sec, respectively and the difference was statistically significant ($p<0.004$). Furthermore, differences between hypothermia + compression (90.00 ± 0.00 sec) and hypothermia + Celox® (48.75 ± 22.32 sec) groups and Warfarin + compression and Warfarin + Celox® groups were statistically significant ($p= 0.05$, $p= 0.044$, respectively). **CONCLUSION:** In conclusion, Celox® as a hemostatic agent provides effective control of hemorrhage not only at normothermia but also with hypothermia and Warfarin use and shortens hemostasis time prominently.

R120) Knowledge of the indications for, and consequences of, massive transfusion among emergency physicians : Claire Milligan¹, J. Smith², I. Higginson¹ : 1. Emergency Medicine, Derriford Hospital, Plymouth, United Kingdom. 2. Academic Department Military Emergency Medicine, Birmingham, United Kingdom.

INTRODUCTION: Uncontrolled haemorrhage is the leading cause of potentially reversible early in-hospital deaths following trauma. Approximately 25% of trauma patients arriving in the ED have evidence of early coagulopathy. Rapid and pro-active treatment of coagulation disturbances in addition to infusion of red cells is likely to improve outcome. It is vital that staff within the ED not only understand the basic pathophysiological consequences of massive blood loss in trauma but are familiar with when and how to administer blood and specific blood components in trauma resuscitation. **METHODS:** A questionnaire designed to test knowledge of the use of blood and blood components in trauma resuscitation was distributed to 32 emergency physicians attending a regional conference in the South West. **RESULTS:** Massive transfusion protocols exist in 4 of the 11 hospitals surveyed. 5/32 doctors correctly defined the term “massive transfusion” whilst 9/32, 6/32 and 3/32 gave correct ratios of RBC : platelets, FFP, and cryoprecipitate. Most correctly identified the level of Hb that would trigger transfusion (20/32), but were unclear about the risks of transfusion reaction following uncrossmatched blood. When asked more specifically about blood component therapy, 18/32 correctly identified target fibrinogen levels. 14/32 recognised that FFP contained fibrinogen, whilst 13/32 recognised cryoprecipitate as a source. 1/32 correctly identified fibrinogen is a component of both. 20/32 doctors guessed >50% of the answers and the remaining 12/32 guessed 50%. **CONCLUSION:** Our survey found that emergency physicians lacked core knowledge about the use of blood and blood component therapy in the context of massive haemorrhage following trauma. Doctors were unaware of how to prevent and treat early coagulopathy. The use of massive transfusion protocols where standardised blood component therapy is automatically delivered at specific points within resuscitation would not only guide doctors, but be a clear step towards minimising the complications associated with massive transfusion.

R121) Combination of Elevated WBC Counts and Liver Enzymes as Predictors of Blunt Liver Lacerations : Wei-che Lee¹, Chao-Wen Chen¹, Yuan-Chia Cheng¹, Liang-Chi Kuo¹, Tsung-Ying Lin¹, Yen-Ko Lin¹, Jing-Guo Lin¹, Hsin-lin Lin¹ : 1. Trauma Surgery, Emergency Medicine, Kaohsiung Medical University Hospital, Kaohsiung, Taiwan.

Background: It is sometimes difficult to decide whether to perform abdominal computed tomography (CT) scans for possible liver laceration in patients who have sustained less severe or minor blunt abdominal trauma. This study was conducted in order to find out whether the basic laboratory work-up could provide information of possible liver laceration in blunt abdominal trauma patients and act as an indication for CT scans.

Methods: In this retrospective case-control study, we included 289 patients who had sustained blunt abdominal injury for which they received abdominal CT scans in our emergency department(ED). Of the 289 patients, the study group (n =42) included patients who had been found to have liver lacerations after obtaining the CT; the controls (n=42) were those not found to have such injuries by the same method with matching of age and gender.

Results: In patients with blunt abdominal injuries, there is a strong difference in liver laceration between elevation of WBC counts (p=0.001), aspartate aminotransferase (AST) (p<0.001) and alanine aminotransferase (ALT) (p<0.001). A logistic regression model demonstrated that

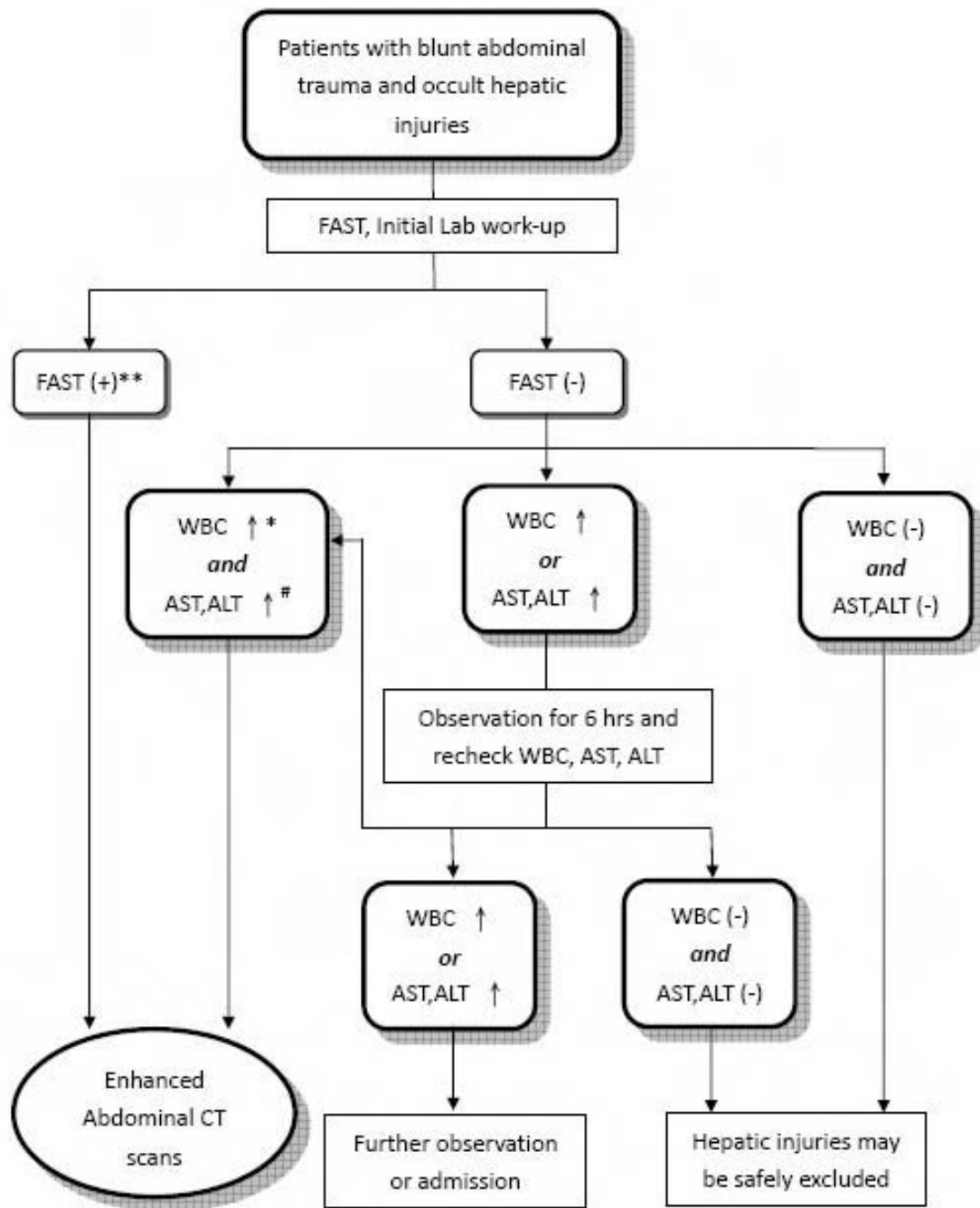
WBC count and AST were independently associated with liver laceration. With elevations of serum AST greater than 100 IU/L, ALT greater than 80 IU/L, and WBC count greater than 10,000/mm³, we found a sensitivity and specificity of 90.0% and 92.3% in the 42 liver laceration victims.

Conclusion: In patients with blunt abdominal trauma, elevated WBC counts together with elevated AST and ALT are strongly associated with liver laceration and warrant further images studies and management.

Table 1. Demographics and averaged physiologic parameters and variables in both groups

Variables	Liver laceration(n=42)	Control(n=42)	p valve
Age(yr)	34.79±19.02	33.63±18.43	0.801†
Female	24	28	0.069§
Systolic blood pressure	122±22	132±25	0.135†
Diastolic blood pressure	76±18	81±17	0.212†
Heart rate	91±23	89±18	0.641†
Temperature	36.3±1.0	36.7±0.7	0.066†
WBC	12,996±5.724	8,573±3.751	0.001†
AST	375±311	95±160	<0.001†
ALT	287±238	74±125	<0.001†

p values are based on the χ^2 test§ and Student t-test†



**FAST(+): Abnormal fluid accumulation and/or identifying liver laceration

*WBC ↑: WBC Count > 10000/mm³

#AST,ALT ↑: AST > 100mg/dl and ALT > 80mg/dl

Proposed algorithm for detecting blunt liver laceration with WBC, AST, and ALT as predictors

R122) EMERGENCY MANAGEMENT OF TOOTH AVULSION IN CHILDREN : Azin Sohrabi¹, Samad Shamsvahdati², Aydin Sohrabi² : 1. pediatric dentistry, Shahid Beheshti university of medical sciences, Tehran, Iran. 2. Tabriz university of medical sciences, Tabriz, Iran.

BACKGROUND: Tooth avulsion is the complete displacement of a tooth from its socket due to intentional or non-intentional injuries. Avulsion of the permanent teeth is the most serious of all dental injuries and a very common event in children. Replantation of the avulsed tooth is the treatment of choice and the success of tooth replantation is directly dependent on several factors, such as extra-alveolar period, storage of the tooth until replantation, type of retention employed, time of endodontic intervention, type of drug prescribed, oral hygiene status as well as general health. So the first measures and emergency management of an avulsed tooth are critical for the prognosis of the treatment. Several studies report lack of knowledge of the population, educators, sports professionals, and even health professionals in the management of tooth avulsion. **CASE:** In this article we will present a case of an 11 years old girl with an avulsed right central incisor who was mismanaged by the dental team in the emergency ward. **DISCUSSION:** Unfortunately there are several cases of dental traumas that lose their teeth due to mismanagement done in emergency visit. Education is extremely important to favor the knowledge on prevention and emergency management of an avulsed tooth, and may enhance the prognosis of tooth avulsion.

R123) Bipolar Epiphyseal Clavicular fracture : Gabrielle O'Connor¹, Coleman O'Leary² : 1. Emergency Department, Galway University Hospital, Dublin , Ireland. 2. Mid-Western Regional Hospital, Limerick, Limerick, Ireland.

CASE: We report the case of a 14 year old boy, who sustained right clavicular injury after falling off his horse. He presented with pain and swelling over both lateral aspect of his right clavicle and sternoclavicular joint. Dedicated radiology revealed bipolar fractures of epiphyses of the right clavicle. **DISCUSSION:** Evidence tells us that clavicle fractures make up only 5% of all fractures and sternoclavicular joint disruption represent even rarer injury to the shoulder girdle. A literature review uncovers only case reports and small case series, the presentation and management of which are discussed.

R124) How to know the prognosis of acetabular fractures in motor vehicle accident: a review of clinical characteristics : Hanjoo Choi¹, Hwa Sik Song¹, Gab Teug Kim¹, Sung Beom Oh¹, Hyueng Chul Seo¹, Hyuk Sang Ko¹ : 1. Department of Emergency medicine, Dankook University Hospital , Cheonan, Chungnam, Korea, South.

INTRODUCTION: Pelvic ring fractures amount to 1.5% of all joint fractures. The most frequent causes of pelvic trauma relates to car accidents (50-60%) and car-pedestrian crash (24-28%). The incidence and severity according to the types of acetabular fractures are not known well. We want to evaluate the clinical characteristics and prognosis of the acetabular fractures. **METHODS:** We reviewed the medical records and the radiographic findings of 168 cases of pelvic bone fractures in motor vehicle accidents diagnosed during 2 years (from March 2007 to April 2009) in our emergency department. **RESULTS:** Proportion of acetabular fractures was 35.7% of entire pelvic bone fractures in motor vehicle accident. Male was 65.0%. Mean age was 44 year old. Majority of cases are driver-accident (37.0%). On the basis on Tile's grouping, the anterior fracture is the most common type (45.6%). Initial hemodynamic status was unstable and AIS score was higher than other types in the anterior fracture. Surgical operations were performed to 59.0% of study patients. When the operative intervention was performed within 3 days, hospital days of patients were reduced. Hospital day of the transverse fracture is longer than other types. Early surgical intervention could also reduce the development of late complications and improve overall clinical outcomes. **CONCLUSION:** Acetabular fractures are not rare cases of the pelvic bone injury in motor vehicle accident. Anterior fracture was the most common type and showed poor prognosis. Early surgical intervention can reduce the hospital residency of patients with the acetabular fractures and the development of late complications.

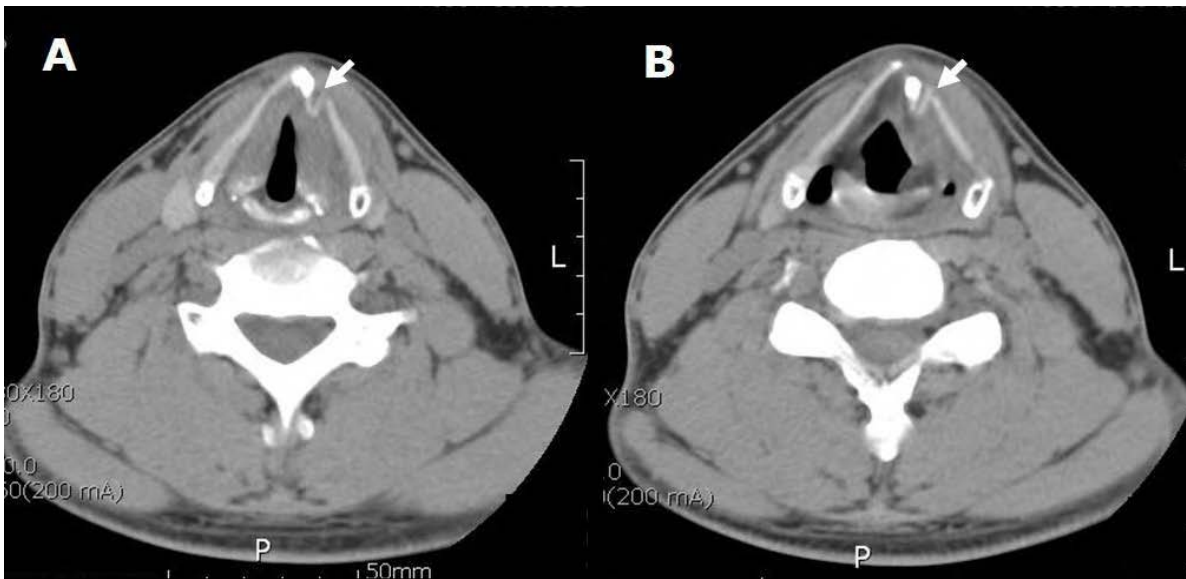
R125) Head Traumas in Children at a University Hospital : Selda Hekim¹ : 1. ESOGU medicine faculty, eskisehir, Turkey.

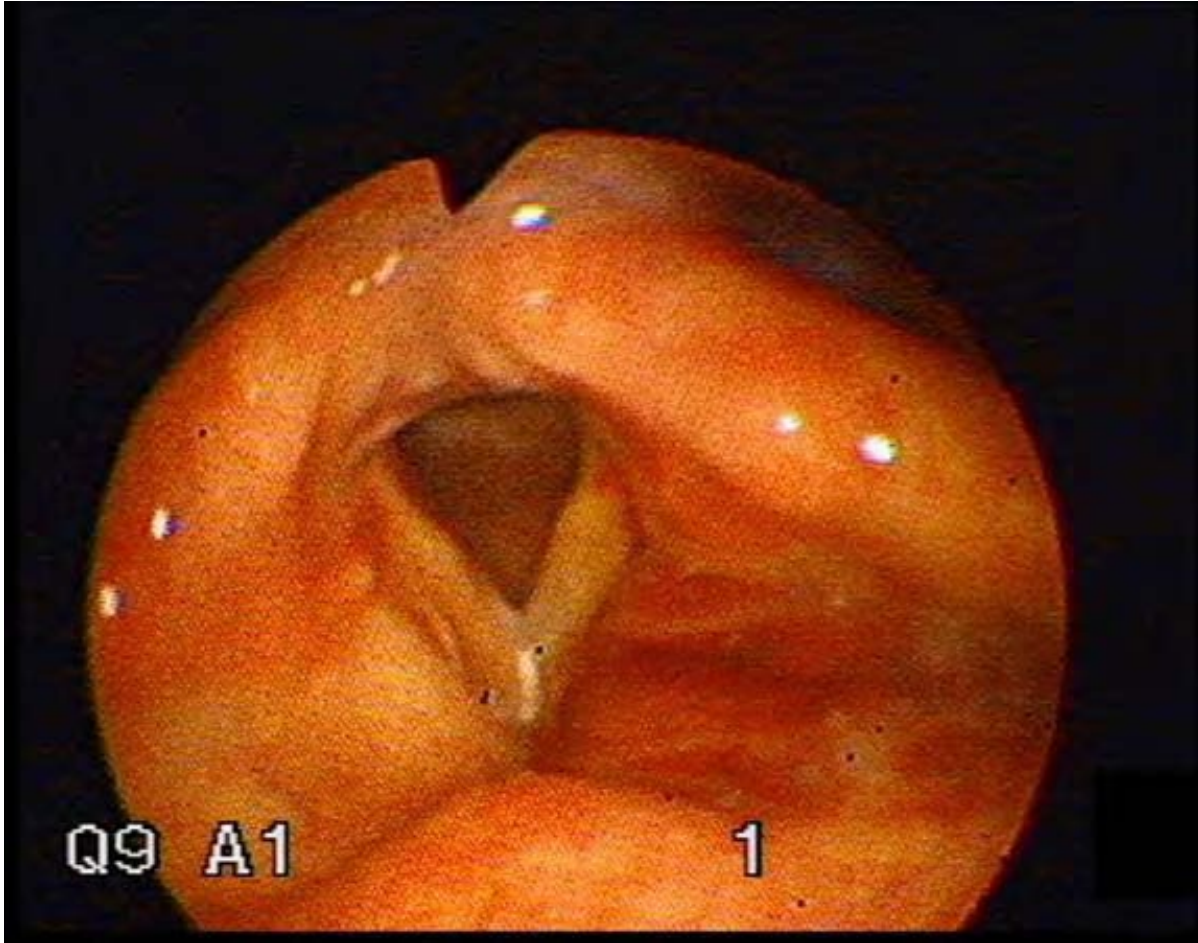
INTRODUCTION: Head trauma in pediatric age worldwide leads to mortality and morbidity. We aimed to determine the common causes of head trauma under age of 18 and radiodiagnostic tools to be preferred diagnosis. **METHODS:** 159 cases who were diagnosed with head trauma that were admitted to the Pediatric Emergency Department of Osmangazi University between 1 January and 31 December 2008, were evaluated retrospectively. **RESULTS:** 101 (63.5%) of the cases were male and 58 of the cases were female. The ratio of the male cases was high and it was statistically significant. When these cases were evaluated according to the age groups; there were 83 cases (52.3%) who were between the age of 0-6, 76 cases (47.7%) were between the age of 6-18. The head trauma rate of the 0-6 age group was meaningfully higher in boys (57%) and the main reason for head trauma was falling (49.2%). In the age group of 6-18, striking with an object to the head was seen more often (42.8%), followed by accident in vehicle accidents (3.1%) and out of vehicle accidents (4.4%). When physical examination findings at presentation were evaluated, it was seen that there was loss of consciousness in 9 cases (5.6%), hematoma (17.2%), interseption (39.6%), ecchymosis and periorbital oedema. The neurological state of the patients were assessed by Glasgow Coma Scale. The plain radiography findings were linear fractures in 8 cases (5%), depressed fractures in 2 cases (1.3%), comminuted fractures in 1 case (0.6%). 148 x-ray findings were evaluated as normal. But Cranial Tomography (CT) scan findings head fractures were noted in 12 cases (7.5%), and subdural hematomas in 2 cases (1.2%) and intracerebral hemorrhage in another 2 cases (1.2%) and cerebral oedema in 2 cases (1.2%). These 18 cases were evaluated by a neurosurgeon and hospitalized. 2 cases died. **CONCLUSION:** Although plain radiographs are helpful in the

diagnosis of head trauma, CT scans are found much more useful for this purpose.

R126) Spontaneously healed thyroid cartilage fracture with displacement: report of a case : Hyun Ho Ryu¹, Hyun Lee Kim² : 1. Chonnam national university, Gwangju, Korea, South. 2. Chosun university hospital, Gwangju, Korea, South.

BACKGROUND: Thyroid cartilage fracture is a rare entity and can be overlooked easily. These cases are difficult to diagnosis and recommended assessment and the treatment guidelines differ. CT with contrast material is especially useful in identifying and localizing the damage caused by blunt neck injuries. **CASE:** A previously healthy 39-year-old male presented to the emergency department (ED) after a neck injury. On arrival at the ED, he complained of inability to swallow solids, lowering of the pitch of his voice, hoarseness, and pain at rest. He had no dyspnea, hemoptysis, evidence of subcutaneous emphysema, respiratory compromise, or bruising of the neck. The initial physical examination was within normal limits except for a tender swollen nose and mild tenderness on palpation over the anterior neck. Computed tomography (CT) (Fig 1) of the neck revealed a fracture line of the left anterior thyroid cartilage with mild displacement. The patient was treated with bed rest, continuous humidified air, voice rest and a liquid diet. Also, prednisone 1mg/kg/day was prescribed orally for 1 week. Two weeks after the injury, he reported decreased inability to swallow solids and decreased hoarseness. On follow-up examination one month later, no voice or airway problem remained. **DISCUSSION:** In the emergency department, early diagnosis and treatment as airway management and steroid were essential to a successful outcome without surgical intervention.

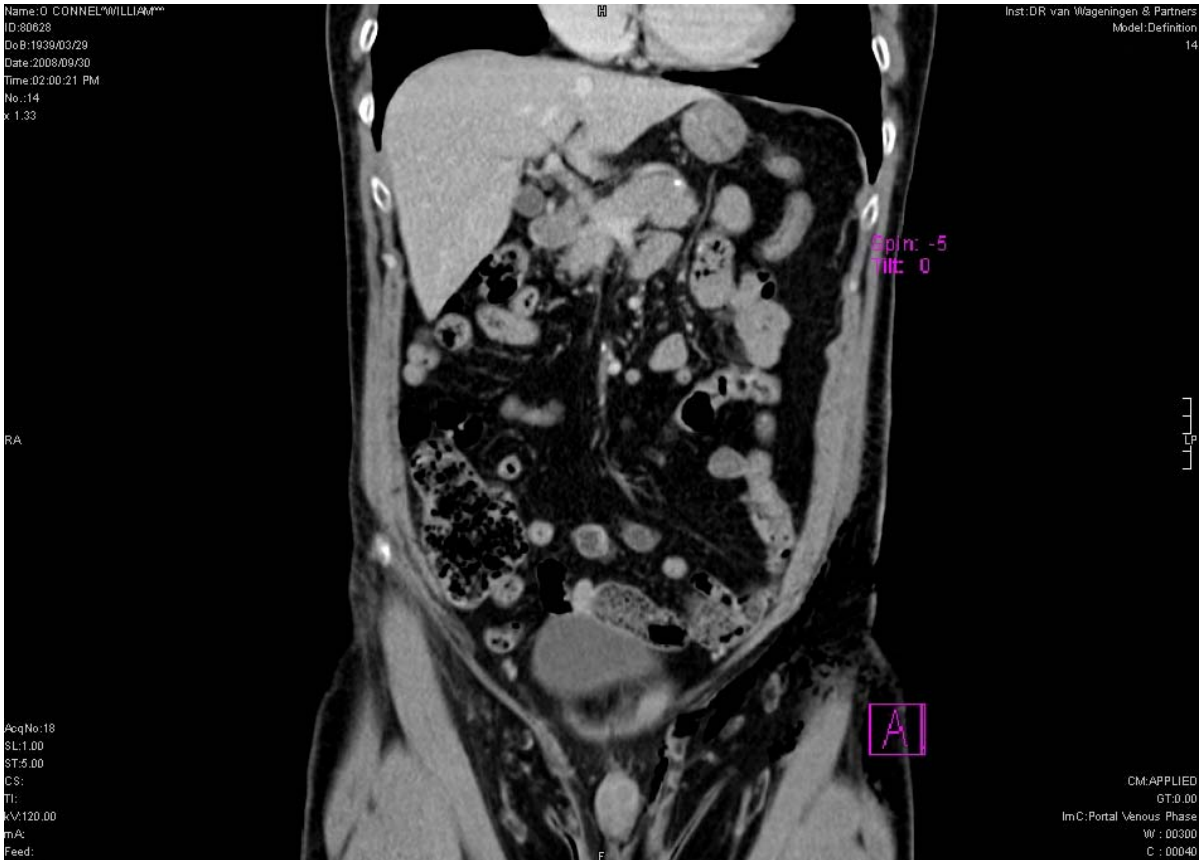




R127) High Voltage Electrical Injury and Hyperbaric Oxygen Therapy (HBOT): A Review of Multiple Pathological Processes and the Suitability for HBOT. : Errol P. Visser¹ : 1. Emergency Centre, Vergelegen Medi-Clinic, Somerset West, South Africa.

BACKGROUND: High voltage electrical injury results in macroscopic and microscopic injuries. **CASE:** A case study was performed to review the spectrum of injuries and the role of hyperbaric oxygen therapy in managing these injuries. **DISCUSSION:** There is a paucity of published data for the role of HBOT. Conditions which may benefit include thermal burns, crush injuries, necrotising soft tissue infections, problematic wounds, compromised skin grafts and flaps. The case study reviews the role of HBOT in ischaemic reperfusion injury, nitric oxide, wound healing and remote organ injury as well as the cost effectiveness of treatment.





CT abdomen

R128) Acute Occlusion of Right Coronary Artery by an Airgun Pellet : Muhammad Ghumro¹, Eashwar B. Kumar¹, Raj Nata¹, Syed M. Tariq¹, Salim Cherroth¹, Thet Su Win¹ : 1. Medicine, Queen Elizabeth Hospital, King's Lynn, United Kingdom.

BACKGROUND: Cardiac trauma can be caused by either penetrating or non-penetrating injuries. The most frequently encountered penetrating injuries are stab wounds but a number of injuries from gun pellet have been reported. Here we report a case of acute inferior-wall myocardial infarction after an injury by airgun pellet. **CASE:** A 28-year old male presented with pellet injuries after being shot by an airgun. One pellet entered the thorax at the 3rd intercostal space in the midclavicular line. Chest radiography showed a pellet within the cardiac silhouette. Computed tomographic scan of the thorax confirmed the pellet lodged in the right atrioventricular ring. The patient responded to conservative management but self-discharged the next day. He was readmitted 24 hours later with central chest pain. Raised Troponin I level (46 ng/ml) and ECG changes confirmed acute ST-elevation inferior myocardial infarction. Echocardiogram showed moderate left ventricular function (LV ejection fraction 58%), a dilated right atrium and ventricle, paradoxical septal motion and a small

pericardial effusion. Coronary angiography showed occlusion of the right coronary artery by a radio-opaque object. The aortogram demonstrated the pellet occluding the right coronary artery. Left ventriculogram demonstrated inferior wall hypokinesia. The patient was managed conservatively with a regimen of anti-platelets agents, beta-adrenergic blocker, angiotensin-converting enzyme inhibitor and statin. Removal of the pellet, either percutaneously or surgically, was not attempted due to the risk of catastrophic haemorrhage. **DISCUSSION:** Airgun pellet wounds are usually associated with superficial soft tissue damage but more serious injuries can occasionally occur. We report a case of acute myocardial infarction due to occlusion of right coronary artery by an airgun pellet. It is possible that the pellet piercing the right coronary artery may have migrated further distally or caused thrombosis within the artery, resulting in a critical occlusion of the artery.

R129) Does tranexamic acid given upon admission in the emergency department decrease transfusion needs, hidden blood loss, or mortality among patients with a first hip fracture?

A randomized placebo-controlled trial : Nick Vermeersch¹, Marie-Anne Claey's¹, Wim Hoste¹, Elke Haest¹, Ives Hubloue¹, Patrick Haentjens¹ : 1. Vrije Universiteit Brussel, Jette, Brussels, Belgium.

INTRODUCTION: Purpose: The aim of the current randomised controlled trial was to determine if, and to what extent, tranexamic acid given upon admission in the emergency department might decrease hidden blood loss, transfusion needs, and all-cause mortality among patients sustaining a first hip fracture. **METHODS:** The current double-blind, placebo-controlled study compared 1000 milligrams of intravenous tranexamic acid given upon admission in the emergency department with a placebo consisting of saline solution. **RESULTS:** Overall, 55 patients with a first hip fracture were randomized. Compared to placebo the administration of tranexamic acid resulted in a statistically not significant decrease in the proportion of patients needing transfusion (effect size - 6.4 percent; 95% confidence interval [CI]: - 30.2 to 18.7 percent; P=0.79), the amount of hidden blood loss (effect size - 119 milliliters; 95% CI: -243 to 5 milliliters; P=0.06), and all-cause mortality after injury (hazard ratio = 0.76; 95% CI: 0.35 to 1.66; P=0.49). Factors independently and statistically significantly associated with increased hidden blood loss were the regular pre-operative use of aspirin and an intertrochanteric (extracapsular) fracture type, with a mean increase in hidden blood loss of 179 and 153 ml, respectively (P=0.005 and P=0.012, respectively). **CONCLUSIONS:** Overall, the results of the current randomized clinical trial were inconclusive. With the current numbers available, no statistically significant differences were seen between hip-fracture patients given placebo and patients given tranexamic acid regarding the proportion of patients needing transfusion, the amount of hidden blood loss, and all-cause mortality up to 4 years after injury. Nevertheless, the direction of the effect sizes associated with these outcome variables were all in favor of tranexamic acid.

R130) Review of Minor Traumatic Brain Injuries in the Emergency Department of a Small Local Spanish Hospital. : Richard van der Kleyn¹, Virginia Pont Lafront¹ : 1. Urgencias, Fundacio Salut Emporda, hospital de Figueres, Figueres, Girona, Spain.

INTRODUCTION: There are no Spanish guidelines for the use of CT in minor TBI. Recent

published guidelines include the CHCR: Canadian Head CT Rules, NOC: New Orleans Criteria, CHIP: CT in Head Injury Patients and the Clinical policy of the American College of Emergency Physicians: ACEP. Our hospital is a 170-bed hospital serving a community of about 104,000 inhabitants. Objective: In the process of renewing our TBI protocol we decided to review our current clinical practices in the diagnosis of minor TBI and compare the data with the above guidelines. METHODS: We performed a prospective observational study between the period of the 1st of February and the 30th of June 2009. The attending physicians of our ED were asked to fill out a questionnaire of all minor TBI adult patients. RESULTS: Ninety-nine patients were registered in the study period. Mean age was 49, male female ratio of 2:1. TBI was caused by falls in 48%, traffic accidents in 31%, aggression in 12% and other causes in 8%. 42% suffered from LOC and 30% from amnesia. 29% complained of headaches, 8% presented with vomiting. 21% were intoxicated (alcohol or drugs) and 9% used anticoagulants. A GCS of 15 was recorded in 89%, 14 in 7% and 13 in 3%. Sixty-three skull X-rays were performed of which 5 were pathological, but in only 3 subsequent CT imaging showed traumatic injuries. 39 patients underwent a head CT of which 18% were found to show traumatic injuries. 9 patients were referred to another hospital, 25 were admitted for observation and 65 were discharged. Applying the criteria of CHCR, NOC, CHIP and ACEP, CT scans would have been performed in 31,43,60 and 62 of the patients respectively. Using the ACEP guidelines only 9 patients would have been admitted. CONCLUSION: Although a difference was found between the numbers of patients receiving a diagnostic CT scan compared to the current guidelines implementation of the ACEP guidelines would lead to a reduction of patients admitted and the use of skull x-rays, leading to a cost saving. Less admissions also means freeing up nursing time and bed space in an already overstretched emergency department.

R131) Will CT miss something? : Kuo-Tai Chen¹ : 1. Emergency Department, Chi-Mei Medical Center, Tainan, Taiwan.

INTRODUCTION: Nonoperative management of blunt solid organ injury has currently become the standard treatment. Computed tomography (CT) plays a pivotal role in evaluating solid organ trauma and recognizing associated injuries.

Objective: The aim of this study is to identify missed injuries in patients sustaining blunt solid organ trauma.

METHODS: We reviewed the medical records of all blunt trauma patients admitted to Chi-Mei Medical Center from Aug 2003 to Oct 2006. Every patient who underwent CT in the emergency department and the CT demonstrated solid organ injuries only were included. A miss diagnosis was defined as the presence of altered diagnoses by further imaging studies or surgical findings. RESULTS: Two hundred and eighty six patients were enrolled, including 24 patients who had at least one miss diagnosis (miss group) and 262 patients whose diagnoses were unaltered (unaltered group). The numbers and results of laparotomy and follow up CT of each group are illustrated in Figure 1. Twenty-four of the 83 (28.9%) laparotomies discovered missed diagnoses and only one of the 28 (3.6%) follow up CT revealed an altered diagnosis. The miss group had obvious higher rate of intensive care unit admission. Comparing other variables between the two groups, the miss group had longer hospital and ICU stays and higher ISS (Figure 2). CONCLUSION: A significant portion (8.4%) of solid organ trauma patients

had altered diagnosis and all the missed injuries demanded surgical treatment. Most missed diagnoses were discovered during laparotomy; only 3.6% follow-up CT revealed an altered diagnosis. The value of follow-up CT is debated for the low positive rate. A high rate of missed diagnoses was found in the patients experiencing laparotomy. It implies that maybe more missed injuries are hidden in patients who underwent conservative treatment. In addition, patients with missed diagnoses had longer hospital courses. Therefore, despite the wide application of conservative treatment to patients with solid organ trauma, the trauma surgeons should be aware of the limitation of CT and do not hesitate in proceeding with surgical treatment in patients with suspicion of an altered diagnosis.

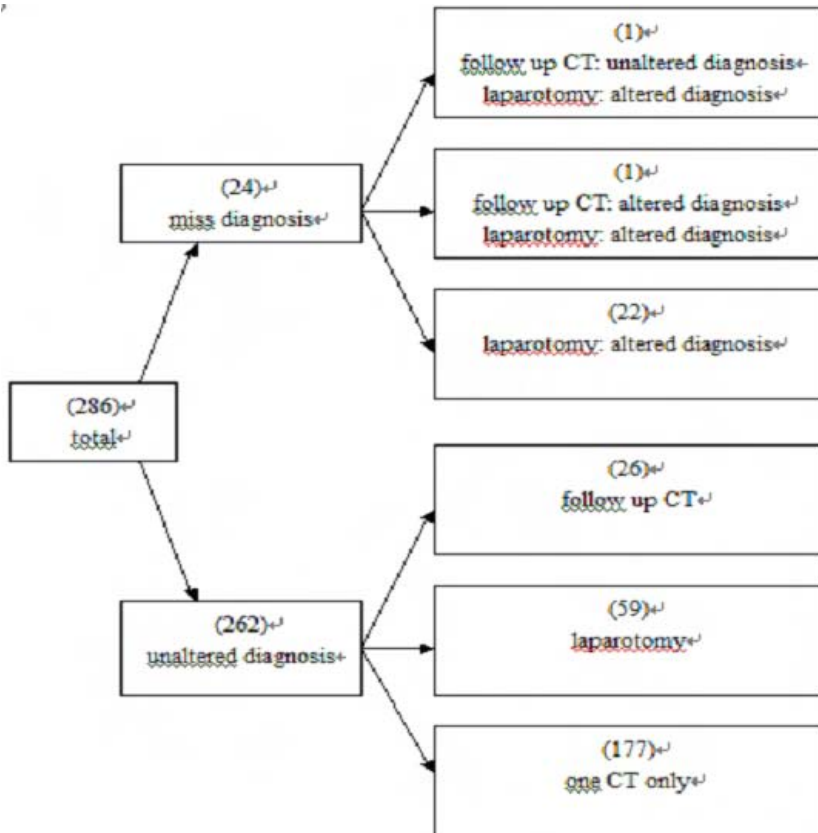


Fig 1. The numbers and the results of follow up CT as well as laparotomy in the study population.

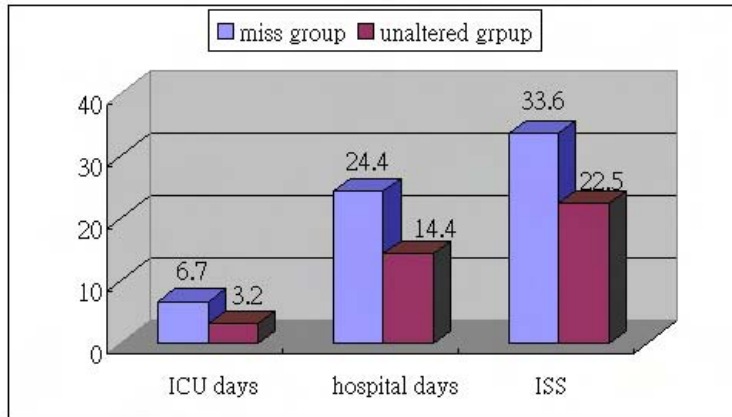


Fig 2. Comparison of Injury Severity Score (ISS), and intensive care unit (ICU) and hospital days between the miss group and the unaltered group.

R132) CRRT PREVENTS ARF? : Spiros Papanikolaou¹, Marinos Daveronas¹, Bill Niakas¹, Dora Tsouka¹, George Tassopoulos¹, Pavlos Polakis¹ : 1. ATHENS MEDICAL CENTER –CLINIC IASIS PIRAEUS-ICU, PIRAEUS, Greece.

INTRODUCTION: Rhabdomyolysis systemic syndrome and acute renal failure (ARF), a major complication caused by hypermyoglobinemia in patients with rhabdomyolysis, is a common problem in patients in ICUs, particularly multitrauma patients, and in many times it is permanent. Standard treatment is hydration, mannitol, urine alkalization, diuretics, and finally CRT treatment when RF occurs and there is no other way to treat. Hypothesis - Since the mechanism of acute renal failure (ARF) is the precipitation of the myoglobin in nephrons, if we can decrease the myoglobin that comes from the “destroyed muscles” before it precipitates in the nephrons it may be possible to avoid the RF that follows. **METHODS:** We used the B.Braun company machine (Diapact) CRRT in the mode of CVVH or CVVHD with

flow of 2-3,5lt/h, blood flow 180 to 220cc/min. Filter is Diapac acute B.Braun company (1.5 m2 active surface) (with sieving-coefficient for myoglobin 0,55) and NaHCO3 enriched replacement fluid. This machine has the ability to regulate the temperature of the replacement fluid, correcting the patient's temperature with this method. We used for the haemofiltration a 12 french double lumen venous catheter in the femoral vein (length 20 cm). As an indirect measurement to evaluate the method we used the CPK level in blood plasma (primary, during and after the treatment). We review 8 patients in ICU that we treated with this method (one accidentally, and the other under protocol). RESULTS: Pt 1: septic shock after splenectomy (OPSI), Pts 2, 3, 4, 5, 6: multitrauma (one: CRUSH SYNDROME), Pts 7, 8: reperfusion injury. See table. CONCLUSIONS: The early (prime) use of CRRT (CVVH/CVVHD) in rhabdomyolysis takes away the primary excess amount of myoglobin and gives the patient the chance to improve their clinical condition and improves their final outcome with regards to the severity and permanence of the RF.

pt1

DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14
CPK morn	*7880	3600 0	2764 0	2764 0	1523 1	8230	5480	324 4	195 2	69 3	476	59 0	16 8	
CPK noon	*1862 0	3535 0	3940 0	2456 0	1824 0	1113 0	8670	565 7	387 0		571 7	35 0		
CPK afternoon	*3758 0	6532 0	4795 2			1008 0	8040		218 5		475	32 2		14 2
Urine mean valuemorn	*230	180	10	5	traces	5	10	10	32	90	70	18 0	12 0	30
Urine mean value noon		50	10	10	traces	10	traces	8	70		180	14 0	10 0	40
Urine mean valueafter n.	*320	25	10	10	4	10	10	12	60		130	12 0	50	40
CVVHD	yes	yes	yes	yes										
CVVH					yes	yes	yes	yes	yes	no	no	no		Yes

pt1: for example

R133) Massive Transfusion Protocol : Gamal Eldin A. Khalifa¹ : 1. Emergency, Al Rahba Hospital, Abu Dhabi, United Arab Emirates.

INTRODUCTION: Hemorrhagic shock is the second most frequent cause of death in trauma patients and is the leading cause of early in-hospital trauma deaths. The main management strategies for treating hemorrhagic shock are the arrest of bleeding and the replacement of circulating volume and oxygen-carrying capacity. In trauma, massive transfusion is defined in several different ways. Most commonly, definitions are based either on the replacement of a fraction of the patient's blood volume within a given time period or on the transfusion of a given number of red blood cells (RBC) within a given time period. Definitions based on patient blood volume stipulate either the replacement of one blood volume in 24 hours or the replacement of 50% of one blood volume within three hours. The rationale for blood transfusion in trauma is to enhance oxygen-carrying capacity. Massive transfusion of one blood volume is associated with many complications that might include Transfusion Related Acute Lung Injury (TRALI). Our objective is to design a practical Massive Transfusion Protocol (MTP) in trauma patients. **METHODS:** Review of published literature and MTP from different institutions in USA and Europe. **RESULTS:** The authors define a MTP that defines the indications, ordering procedure, contents, dispensing, monitoring and documentation of blood products.

R134) Role of skull x-ray and brain CT scan in clinical decision making of minor head trauma : Hamidreza Hatamabadi¹, Behroz Hashemi¹, Ali Shahrami¹, Hossein Alimohammadi¹, Ali Arhami¹, Hamid Kariman¹ : 1. Emergency Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

METHODS: In this prospective analytic descriptive study, the results of skull x-ray and brain CT scan in patients with mild head trauma who presented to Emam Hosain hospital from October 2004 to January 2006 evaluated. In all of the patients with mild head trauma (upon the criteria), we selected the group of moderate and high risk and did skull x-ray and brain CT scan. **RESULTS:** There was 546 cases of mild head injury. The study showed that 300 patients are female, 236 are male. Maximum of age was 83 years and minimum was 1 month with mean at 29 years. Traffic accidents were the most common cause of mild head injury (59.3%), falling down (23.8%) and others (16.9%). All of the patients had x-ray, 479 (92.8%) were normal while 3.5% had linear fractures and 3.7% had depressed fractures. About the results of brain CT scanning, in the group of moderate risks 94% had normal findings, epidural hematoma (2.1%), brain contusions (1.4%), subdural hematoma (1.4%) intracerebral hematoma (0.7%) and others (0.4%) had multiple injuries. In the group of high risk, the results of CT scanning showed that 70% had normal findings, subdural hematoma (9.8%), brain contusion (6.6%), epidural hematoma (3.3%), had intracranial hematoma (3.3%) and 7% had multiple injuries. **CONCLUSION:** It is obvious that there is a direct correlation between the clinical type of head injury and the radiological findings. The proper use of guidelines based primarily on the clinical pictures allow evaluating patients with head injury and reducing radiographic request in the emergency department.

R135) Head injury after bicycle accidents in children and youngsters in Flanders : Hans Delye¹, Patrick Van de Voorde², Marc B. Sabbe¹ : 1. Emergency Medicine, University Hospitals Leuven, Leuven, Belgium. 2. University Hospital Gent, Gent, Belgium.

INTRODUCTION: A population-based registry on bicycle related head injury might provide necessary information for the development of head protection. We carried out an analysis of bicycle related head trauma data in the PENTA (PaEdiatric Network around Trauma) registry. **METHODS:** PENTA was a prospective population-based trauma registry in Flanders (Belgium). All injured children (0–17 years) who presented at an ED, as well as all deaths on scene, were included. The registry was split up in two levels. A basic dataset (group A: 30 variables) was collected in a predefined sample of all eligible patients (n=7879). All patients who died or stayed in hospital for more than 48 hours were included in the B group (291 variables; n=244). We analysed all data for head injured patients or victims of a bicycle accident. **RESULTS:** 651 patients of the A group (8.3%) presented with a head injury. 24.4% were traffic-related road accidents. Three quarters of all road traffic victims with a head injury were cyclists. 685 victims (8.7%) presented with a bicycle related accident. In the majority (76.4%) no opponent was involved. Only 25 children (10.7%, 34.7% unknown) wore a bicycle helmet. 25% of bicycle-related trauma, presented with head injury. The presenting symptoms were mostly not severe. Concussion was the most frequently diagnosed head injury (34%). 115 patients in the B group (47.1%) suffered a head injury. Almost half got involved in a road traffic accident (48.7%). Of all road traffic accident victims, 37.5% were riding a bike. Concussion was the most frequently diagnosed head injury (33.9%), followed by skull fracture (31.3%), acute subdural haematoma (19.1%) and brain contusion (17.4%). **CONCLUSION:** Bicycle accidents are a frequent cause of head injury in children in Flanders, especially in young teenagers. Without involvement of another vehicle, most bicycle crashes are low-velocity and low-energetic. Therefore, it is more likely that some head injuries can be prevented by bicycle helmets. Unfortunately, helmet use rate is very low in Flanders.

R136) Surveillance of road accident admission to ED in Matera : Carmine Sinno¹, Margherita G. Maragno¹, Grazia Mastromarco¹, Madio Nardiello¹ : 1. emergency , Hospital, Matera, matera, Italy.

INTRODUCTION: In Italy during 2007 were reported 230.871 road accidents with 5131 deaths and over 325.850 victims with variable injuries. In the country of Matera were reported 467 events, 22 deaths, 804 victims. We conducted this epidemiological study to evaluate our data on road accident admitted to ED in Matera: 1) admission rate for road accident; 2) severity code and outcome of events admitted; 3) type of event for people admitted to hospital, type of people injured, time related events, department of admission. **METHODS:** To collect data as wide as possible, clinical files related to road accident admission to ED in Matera in the period from Jan 05 to Dec 08 were evaluated. **RESULTS:** From Jan 05 to Dec 08 road accident admission were 7.258 (4.744 m, 2.514 w), 6,1% of admissions. Rate of admission for traumatic injury was 17,5%. Total amount of admission to hospital was 397(5,5% of all admission for traumatic injury); 29 were transferred to other hospitals due to major head injury and face injury. Number of people admitted to ED as dead or dead during early stabilization and diagnosis was 8(0,1%). Tab. 1. **Discussion:** Data from our study show an increased rate (7,5%) of total road accident admission to ED. We report a higher rate of events compared to ISTAT data. During the period observed we reported an overall increased number of admission specifically with red-yellow code (80,7%). The small number of death reported is because 118

institution improved quality assistance during transport, while leaving deaths out of hospital. As in other studies, over 50% of victims and over 40% of people admitted to hospital were < 30 yr old, people. The most common site of injury were legs and arms, people admitted to ICU-Resuscitation and General Surgery had traumatic injury of limbs. In over 30% of green code admitted to hospital, color code during triage was under evaluated on clinical parameters detected.

CONCLUSIONS: Epidemiological data, contradictions between studies coming from different authority, recognition of relevant position statement become reason to better understand events and improve our clinical practice.

Table 1: Results

Age related data	Triage code	Hour of admission to ED	Age related data of admission to hospital	Vehicle/victim	Admission to Hospital Departments	Exit for admission to Hospital Departments
985(13,6%)<18 yr	red for 98 cases(1,4%)	66,5% from 8 to 20,00	64(17.53%)<18 yr	25,44% motorcycle drivers	72,4% of red codes	218 (54,91%) were admitted to Orthopaedic Department
1.683(23,18%)18-25yr	yellow for 515 (7,09%)	16,9% from 20,00 to 24.00	65 (17.8%) 18-25 yr	23,17% car drivers	40,1% of yellow codes	70 (17,6%) to General Surgery Department
1.111 (15,3%) 25-30 yr	green for 5.667 (78,7%)	11,39%. from 24,00 to 4,00	65 (17.8%) 18-25 yr	17,88% pedestrians	1,69% of green codes	29 (7,30%) to other hospitals
2.389 (32,08%) 31-50 yr	white for 978 (13,47%)	5,28% from 4,00 to 8,0	34 (9,32%) 25-30 yr	14,35% were anterior car passengers		19(4,78%) in ICU-Resuscitation Department
1.150(15,8%) >50 yr			89 (24,38%) 30-50 yr.	5,7% posterior car passengers		12(3,02%) in Neurology Department
			113 (30,9%)>	3,52%		13(3.27%)

			50 yr.	posterior motorcycle passengers		in Paediatric Department
				3,52% posterior motorcycle passengers		

R137) Does CT evidence of flat inferior vena cava indicate hypovolemia in blunt trauma patients with solid organ injuries? : Kuo-Tai Chen¹ : 1. Emergency Department, Chi-Mei Medical Center, Tainan, Taiwan.

INTRODUCTION: Assessment of the circulating volume is the cornerstone in management of blunt solid organ trauma patients. Presence of a collapsed inferior vena cava (IVC) in CT images had been proposed to relate to hypovolemia.

Objective: The purpose of this study is to evaluate whether a flat IVC seen on CT scan is an effective indicator of hypovolemia in blunt trauma patients with solid organ injuries.

METHODS: We conducted a retrospective chart review in all trauma patients with solid organ injuries admitted to Chi-Mei Medical Center from July 2003 to September 2006. We measured the IVC on axial tomographic views from the infrahepatic portion to the caval bifurcation. Flat IVC was defined as the ratio of the transverse-to-anteroposterior dimension greater than 3:1 and the maximal IVC diameter less than 9mm in at least three consecutive sections. We compared the Injury Severity Scores (ISS), hemodynamic parameters, the amount of the fluid infusion and blood transfusion, arterial embolization and laparotomy requirement, mortality rate and hospital course between patients with flat IVC (F group) and with non-flat IVC (NF group). **RESULTS:** Of the 226 patients reviewed, 29 had CT evidence of flat IVC. Age, gender, arterial embolization and laparotomy requirement, and the initial shock episodes at the ED were similar for those subjects in the F group and the NF group. However, there was a significant association of flat IVC with rate of overall ED shock episodes at the ED, and mortality rate (Figure 1). Comparing other variables between the F group and the NF group, the F group had lower hemoglobin level, higher ISS, longer ICU stays and larger amount of blood and fluid transfusion (Table 1). **CONCLUSION:** CT evidence of flat IVC is an excellent indicator of hypovolemia in blunt trauma patients with solid organ injuries. Trauma patients may arrive at the ED presenting with normal arterial pressure, however, 75% patients with flat IVC may deteriorate to a shock state soon. Larger amount of isotonic fluid and blood transfusion as well as aggressive bleeding control are crucial to these patients.

Table 1. Comparison of lowest hemoglobin levels, the amount of blood and fluid transfusion, hospital and intensive care unit (ICU) stays and the Injury Severity Score (ISS) between F group and NF group.

Characteristic	F group	NF group	P-value
Lowest Hemoglobin (mg/dl)	8.4±2.7	10.4±2.2	<0.001
Blood transfusion(U)	21.6±2.5.5	4.6±8.7	<0.001
Fluid infusion(ml)	1675.9±1445.8	852.8±1172.1	0.001

ICU days	5.4±6.5	3.3±5.1	0.049
Hospital days	16.9±16.5	14.3±14.2	NS
ISS	41.8±23.8	20.3±10.9	<0.001

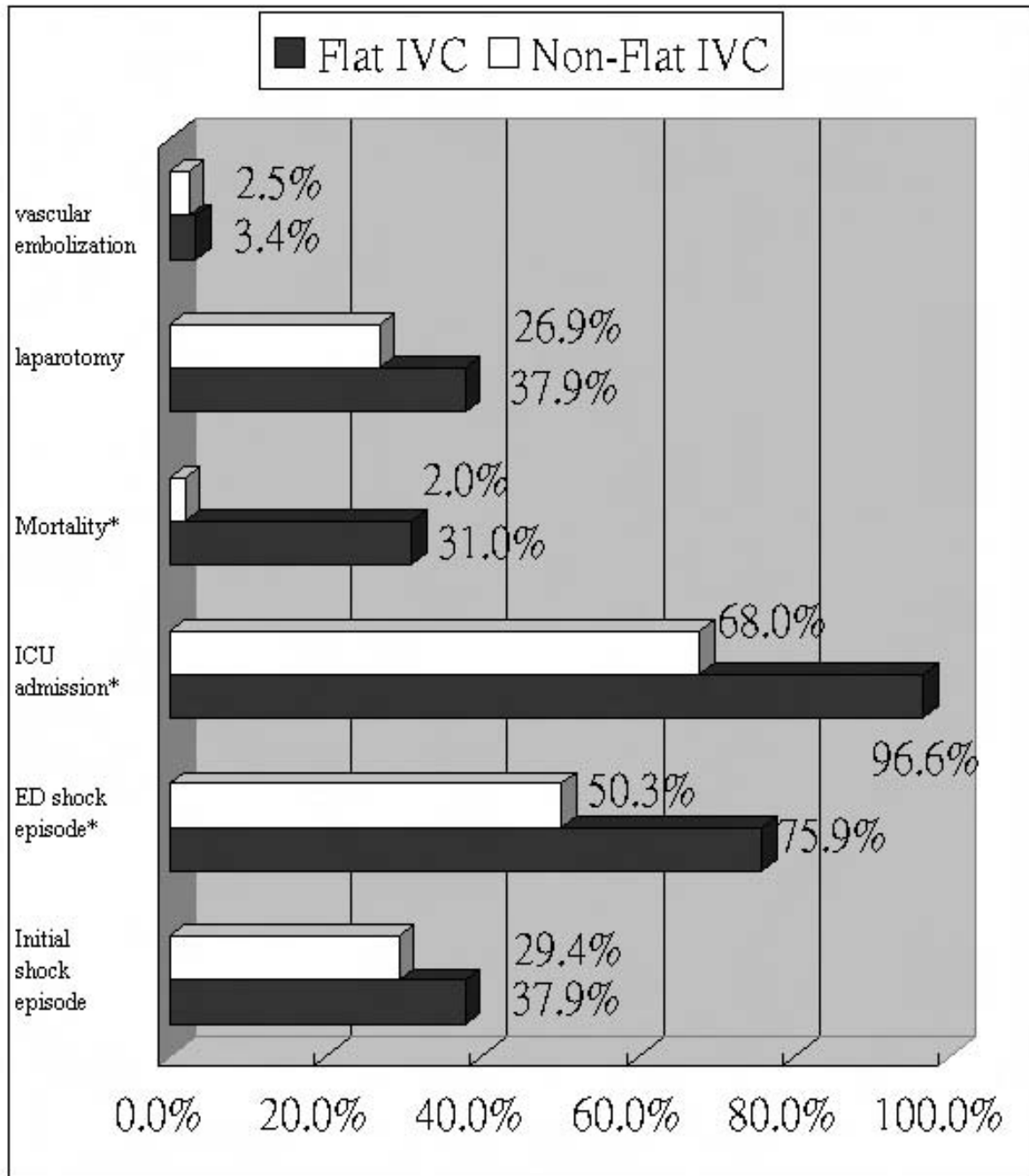


Figure 1. Rate of vascular embolization (TAE), laparotomy, intensive care unit (ICU) admission, initial and overall ED shock episodes in cases with flat IVC and non-flat IVC.

R138) Right ventricular rupture following blunt chest trauma with a successful outcome: a case presentation : Puscas R. Maria¹, Simona Bratu¹ : 1. Emergency Department, Clinical Emergency County Hospital , Targu-Mures, Mures, Romania.

BACKGROUND: The increase in high speed motor vehicle accidents has increased the number and severity of chest injuries. The majority of patients with blunt cardiac trauma and rupture of the heart die before they reach the hospital. The diagnosis may be occult in some patients, in others, it should be made in extreme urgency. The presence of associated injuries makes the diagnosis difficult. **CASE:**

We present a 53 year-old male, driver, involved in a road traffic accident. The helicopter was deployed because the location was 150 km away from the regional trauma center. The patient had signs of head trauma GCS=12, BP 80/50 mmHg, HR 110/min, with no evident signs of severe lesions to other body regions. Patient was stabilized and transported with high suspicion of shock. During transport the vital signs improved. In the ED, the patient was stable, a FAST ultrasonography showed no signs of bleed. Labs:Htc 35%, Hb11.5g/dl, complete CT-scan and x-ray were ordered. Before CT scan, the patient deteriorated: BP 50/30mmHg, HR 127/min, spO2 100%, Htc23%, Hb 7,3g/dl. Peritoneal lavage was performed and it was negative. With fluid resuscitation, the vitals improved and CT was done showing pericardial effusion of 18 mm around the apex of the heart. During specialty examinations, the patient deteriorated again. He was transported to surgery. Before thoracotomy, repeat ultrasonography showed a considerable increase of the pericardial effusion. At operation cardiac rupture situated in the right ventricle was repaired with non-absorbable sutures and Teflon pledget. After 11 days, 4 in the ICU, he was discharged in good condition and no complications. **DISCUSSION:** Ultrasonography is a rapid and reliable test to demonstrate the presence of fluid in the pericardial space and can be done by the emergency physician. In patients who arrive stable after a blunt trauma of the heart, delayed diagnosis is common. For those developing late tamponade symptoms, the mechanism of the cardiac rupture can be myocardial contusion followed by necrosis and subsequent rupture. Patients with cardiac tamponade should be immediately transported for surgery.

R139) Analysis of Two Hundred Consecutive Trauma Deaths at Academic Hospital in Iran : Hamidreza Hatamabadi¹, Hamid Kariman¹, Hossein Alimohammadi¹, Ali Shahrami¹, Ali Arhami¹ : 1. Emergency Medicine, Emam Hossein Hospital, Tehran, Iran.

INTRODUCTION: Understanding the nature and severity of trauma, has a pivotal role in determination of priorities for prevention of trauma, its mortality and morbidity, and also for improvement of trauma care and system development. Distribution of nature and severity of fatal injuries is basically different from non-fatal injuries. As a developing country, Iran is afflicted by a high number of trauma fatalities. **METHODS:** Two hundred consecutive trauma deaths occurring in an approximately 30 month period in Emam Hossein Hospital were reviewed for TRISS using both reference and native coefficients retrospectively. Unexpected deaths were identified using TRISS. **RESULTS:** One hundred eighty-four patients had

adequate data for calculation of TRISS. Of these, mean age was 41.5, mean Glasgow Coma Scale score was 8, mean Revised Trauma Score was 4.77 and mean Injury Severity Score was 26.7. Mean time to death was 123 hours; 34.8% died within 12 hours, 55.4% died within 48 hours and 77.7% died within 7 days. Among the patients, 61.9% had severe head and neck injury and 16.3% had no vital signs on admission. Using reference coefficients mean TRISS derived probability of survival was 0.62 and using coefficients of a native study it was 0.42. Using reference coefficients, 120 deaths (65.2%) and using the native coefficients seventy-eight (42.4%) deaths were unexpected according to TRISS. CONCLUSION: The high unexpected trauma death rate in this hospital, and the fact that preventable trauma deaths are almost definitively among such cases, implies the need for further studies and employment of TRISS as a tool for identification of cases suitable for trauma audit sessions and as a filter for peer-review in addition to its application as a component of trauma system development.

R140) ISOLATED ZONE I VERTICAL FRACTURE OF THE FIRST SACRAL VERTEBRA: A CASE REPORT : Serkan Bilgic¹, Yuksel Yurttas¹, Mustafa Kurklu¹, Huseyin Ozkan¹, Orhan Cinar¹, Ali Sehirlioglu¹ : 1. Gulhane Military Medical Academy, Ankara, Turkey.

BACKGROUND: Isolated sacral fractures, which occur by shear forces on the pelvic ring, are seen less commonly and they are commonly transversely oriented. In our report, we described an isolated zone I vertical fracture of the first sacral vertebra which occurred with a lateral compression injury mechanism. CASE: A 29-year-old woman, passenger in the front seat in the car, was unrestrained, when another car hit them from right front side of their vehicle. There was no loss of consciousness and hemodynamically the patient remained stable on presentation to our emergency department. On admission, the patient complained of right-sided sacral and low back pain and headache. Physical examination revealed considerable tenderness over the right superior gluteal region and excruciating pain during sacral and iliac compression. There was no clear fracture line on her plain radiographs. Because of her considerable pain over the right sacral region, the patient was referred to multidetector computed tomography (CT) to better illustrate the pelvic bones. CT revealed incomplete, comminuted, zone I fracture located on the superior and anterior part of the first sacral vertebra. Based on her fracture pattern the patient was allowed to ambulate with a crutch as tolerated and was discharged from the hospital for bed-rest following two days of observation. DISCUSSION: Vertical sacral fractures most commonly occur in alar or foraminal zones and they are essentially never isolated, always being associated with an anterior break in the pelvic ring. In our case there was an alar sacral fracture without the other pelvic injuries. Uncommon sacral fractures, these usually occur by shear forces on the pelvic ring. Our patient was injured with a lateral compressive force. To our knowledge, no isolated vertical zone I fracture of the first sacral vertebra, which occurred due to lateral compression injury, has been described previously.

R141) Burst Fracture of The Lumbar Vertebrae Due To a Landmine Injury : Serkan Bilgic¹, Huseyin Ozkan¹, Mustafa Kurklu¹, Yuksel Yurttas¹, Orhan Cinar¹, Ali Sehirlioglu¹ : 1. Gulhane Military Medical Academy, Ankara, Turkey.

BACKGROUND: The blast and thermal effects of landmines cause injuries that usually

involve the lower limbs and the perineum. The spine may also be injured with blast mines but there is no detailed knowledge related to this topic in the literature. Thus the reason we report this case is that spine injuries may well occur due to landmines similar to other injuries like traumatic limb amputations and moreover they may be overlooked. **CASE:** A 29 years old soldier detonated a landmine that caused his injuries while in a conflict zone. He was hospitalized at the initial triage center, due to his multiple injuries for four days. Thereafter, he was transferred to the intensive care unit of our hospital. He had a right below knee and left above knee traumatic amputations, multiple skin lacerations which contained foreign bodies, and a large left forearm skin injury. He had also mild intermittent pain in his lower back. The lumbar paravertebral musculature were diffusely tender to palpation. Radiographs of the lumbar spine revealed an L2 burst fracture. CT scans and MRI of the lumbar spine demonstrated a burst fracture of the L2 vertebrae and moderate compression in the anterior portion of the thecal sac due to the fracture fragment. After healing of the stumps, the patient was mobilized with immediate prostheses and a thoracolumbosacral brace. **DISCUSSION:** We recommend that the entire spinal column be assessed properly in landmine injuries, especially in patients with altered consciousness. In our case, the patient was immediately able to indicate to the medical staff that there were complaints related to the spine, and we could diagnose the L2 burst fracture. If our patient had not been capable of communication, either due to altered mental status or overall severity of his wounds, then this injury could have gone undetected and led to neurological injury due to the relative instability of the fractured spinal segment. In conclusion, spine injuries should not be overlooked when evaluating patients after landmine explosions.

R142) The causes of mortality in multiple trauma in emergency department : Hojjat Derakhshanfar¹ : 1. Emergency Medicine, SBMU, Tehran, Tehran, Iran.

INTRODUCTION: People with multiple trauma comprise the majority of applicants to trauma emergencies in hospitals, so it is important to consider these conditions. In this research, we assessed the cause of mortality in patients injured and hospitalized who died in Imam Hossein hospital, emergency department. **METHODS:** In this research, we considered patients who presented with a traumatic emergency to Imam Hossein Hospital. All patients hospitalized because of multiple trauma disregard to sex, age and vehicle type were followed through admission to the ward or expired in the emergency department or expired after transport to the ward or ICU. **RESULTS:** 84% of the patients were male and 16% were female. 14% of the patients were under 10 years old, 51% were 10-40 years old, 10% were 40-50 years old, 11% were 50-60 years old and 14% over 60 years old. The etiology of blunt multiple trauma was motor and car accident in 70%, fall from height accident 20% were height accident, and was undetermined in 10%. In 65% the location of trauma was in the abdomen and 58% was chest trauma and 48% was trauma to the limb. In about 40% a DPL was performed in which 70% had positive results. About 68% underwent laparotomy, 7% had thoracotomy performed, and 46% had a chest tube inserted. With regards to organs injured, the spleen was injured in 45%, liver in 25%, small intestine in 13% and kidneys in 4% of patients. **CONCLUSION:** Therefore it is necessary for physicians working at emergencies of hospitals dealing with traumatic injuries to pay good attention in order to decrease mortality rate.

R143) How (Un)Useful is the Pelvic Ring Stability Examination in Diagnosing Mechanically Unstable Pelvic Fractures in Blunt

Trauma Patients? : Gil Shlamovitz¹, William Mower², Jonathan Bergman², Kenneth Chuang³, Jonathan Crisp², David Hardy⁴, Martine Sargent⁵, Sunil Shroff⁶, Eric Snyder², Marshall Morgan² : 1. Hartford Hospital, Hartford, CT, USA. 2. UCLA Medical Center, Los Angeles, CA, USA. 3. Long Beach Memorial Medical Center, Long Beach, CA, USA. 4. Cedars-Sinai Medical Center, Los Angeles, CA, USA. 5. San Francisco General Hospital, San Francisco, CA, USA. 6. Tufts Medical Center, Boston, MA, USA.

INTRODUCTION: Our goal was to evaluate the utility of the pelvic ring stability examination for detection of mechanically unstable pelvic fractures in blunt trauma patients. **METHODS:** Retrospective chart review. **RESULTS:** We enrolled 1,502 consecutive blunt trauma patients and found 115 patients with pelvic fractures including 34 patients with unstable pelvic fractures (Tile classification B and C). Unstable pelvic ring on physical examination had a sensitivity and specificity of 8% (95% CI 4–14) and 99% (95% CI 99–100), respectively, for detection of any pelvic fracture and 26% (95% CI 15–43) and 99.9% (95% 99–100), respectively, for detection of mechanically unstable pelvic fractures. The sensitivity and specificity of pelvic pain or tenderness in patients with Glasgow Coma Scale >13 were 74% (95% CI 64–82) and 97% (95% CI 96–98), respectively for diagnosing any pelvic fractures, and 100% (95% CI 85–100) and 93% (95% CI 92–95), respectively for diagnosing of mechanically unstable pelvic fractures. The sensitivity and specificity of the presence of pelvic deformity were 30% (95% CI 22–39) and 98% (95% CI 98–99), respectively for detection of any pelvic fracture and 55% (95% CI 38–70) and 97% (95% CI 96–98), respectively for detection of mechanically unstable pelvic fractures. **CONCLUSIONS:** The presence of either pelvic deformity or unstable pelvic ring on physical examination has poor sensitivity for detection of mechanically unstable pelvic fractures in blunt trauma patients. Our study suggests that blunt trauma patients with Glasgow Coma Scale >13 and without pelvic pain or tenderness are unlikely to suffer an unstable pelvic fracture. A prospective study is needed to determine whether a set of clinical criteria can safely detect or exclude the presence of an unstable pelvic fracture.

R144) The severity of vasospasm correlates with age in hypothermic therapy for severe head injury :

Youichi Yanagawa¹, Toshihisa Sakamoto¹ : 1. Traumatology and Critical Care Medicine, National Defense Medical College, Tokorozawa, Saitama, Japan.

Background: The severity of vasospasms depends on the age of the patients presenting with a non-traumatic subarachnoid hemorrhage. The influence of age on the severity of vasospasms in head injury patient has not yet been investigated by angiography.

Methods: Between 1998 and 2007, conventional cerebral angiography or computed tomographic angiography was performed on the 7th to 14th hospital day for 6 severe head injured patients who underwent induced hypothermic therapy for the treatment of intracranial hypertension or brain insult due to impending brain herniation.

Results: All subjects had minor hemorrhages classified as Fisher group 1 (n=1) or 2 (n=5) on admission. Five of the 6 subjects demonstrated a minimum diameter of the horizontal portion of the middle cerebral artery (M1) under 2.0 mm. The minimum diameter of the M1 was closely correlated with age (R= 0.96, p<0.001). The youngest, namely an 18-year-old subject, suffered a symptomatic cerebral infarction due to a severe vasospasm.

Conclusion: These results suggest that the severity of vasospasms depends on the age of the patients presenting with severe head injury who are treated with hypothermic therapy. A physician should therefore consider the possibility of severe vasospasms, especially in young patients presenting with severe head injuries.

R145) Characteristics of pediatric patients run over by an automobile : Youichi Yanagawa¹, Toshihisa Sakamoto¹ : 1. Traumatology and Critical Care Medicine, National Defense Medical College, Tokorozawa, Saitama, Japan.

Introduction: There is little data concerning the injuries induced by being run over in children. Problem: Characteristics of injuries suffered in children by being run over were investigated. Methods: Between January 1998 and December 2007, the medical charts were retrospectively reviewed to investigate characteristics of the injuries in pediatric patients run over by a car. Patients meeting the following criteria were included: (1). age \geq 12 years old; (2). the patient was struck by an automobile. The subjects were divided into three groups by the mechanisms of injury: (1). Run over; (2). Carried away; (3) Contact. Patients who were in cardiopulmonary arrest on arrival were excluded.

Results: Twelve patients had been run over, 44 patients were carried away and 44 patients had been hit by a car (contact). The average age in the run over group was the lowest, followed by that in the carried away group and that in the contact group was the highest. The Children's Coma Score and injury severity score were not significantly different among the three groups, however, the average chest abbreviated injury score was the highest in the run over group, followed by that in the carried away group and that in the contact group was the lowest. The average duration of admission and survival rate among three groups, were not significantly different.

Conclusion: The patients who were injured due to being run over by a car, tended to be younger and to have severe chest injury, if they arrived alive.

R146) An Unusual Case of Penetrating Neck Trauma Causing Tracheal Rupture, Spinal Cord Injury, and Massive Pneumocephalus : Sylvia Archan¹, Rainer Gumpert¹, Bernhard Kügler² : 1. Medical University of Graz, Graz, Austria. 2. Sanatorium Hansa, Graz, Austria.

BACKGROUND: Traumatic aerodigestive injuries requiring operative repair are rare. We describe a case in which tracheal, esophageal, and spinal cord injury associated with massive pneumocephalus were caused by a flying chainsaw segment. CASE: A 43-year old man sustained a lumber accident in which he was hit by a chainsaw segment that became dislodged due to breakage of the chain and shot through the window pane of the harvester the man was sitting on. The chainsaw segment penetrated the worker's neck causing tracheal rupture as well as fracture of the first and second thoracic vertebrae and entered the spinal canal. Extrinsication was difficult and involved rope rescue. On arrival at the ER, the neck wound was examined and the ruptured second and third tracheal ring could be palpated. The cranial CT scans revealed massive internal and external pneumocephalus. Minimal bilateral parieto-occipital and

temporal subarachnoid hematoma and cortical contusions were also described. CT of the spine showed small pockets of trapped air in the cervical part of the spinal canal, a fracture of the first and second thoracic vertebrae, and a metallic foreign body and bone fragments in the spinal canal at level T1. CT images further demonstrated considerable cervical soft-tissue emphysema, especially pronounced in the pretracheal and prevertebral region, as well as air in the carotid canal without any signs of vessel lesion. The patient underwent emergency surgery in which the chainsaw segment was removed from the epidural space, the tracheal defect was repaired, and an intracranial pressure monitor probe was inserted. There was some bleeding from the thyroid lobe but no major vessels were injured. Due to the patient's critical respiratory state caused by massive aspiration of blood from the tracheal and thyroid injury, the removal of the bone fragment displacing the myelon to the left at level T1 was not attempted.

DISCUSSION: We hypothesize that air travelled along the prevertebral and pretracheal fascial planes and the carotid sheath, passed through the carotid canal, and entered the cavernous sinus.

R147) Transdiaphragmatic Repositioning of the Heart in the Setting of Emergency Laparotomy after Blunt Trauma : Sylvia Archan¹, Rainer Gumpert¹, Veronika Matzi¹, Bernhard Kügler², Freyja-Maria Smolle-Jüttner¹ : 1. Medical University of Graz, Graz, Austria. 2. Sanatorium Hansa, Graz, Austria.

BACKGROUND: Cardiac luxation after blunt trauma is a rare condition that carries a high mortality rate. We present a case of luxatio cordis where the diagnosis was missed by the radiologist on the original CT scan. **CASE:** A 47-year-old man was involved in a frontal motor vehicle crash. The emergency physician found a polytraumatized patient with Glasgow Coma Score 3, gasping respiration, and barely palpable pulse. Suctioning, tracheal intubation, and right-sided tube thoracostomy were performed. During air transport, the patient's hemodynamic situation deteriorated in spite of aggressive fluid resuscitation. On arrival in the ER of our facility, the patient was in hypovolemic shock. FAST showed a minimal amount of free fluid. The posterior displacement of the heart visible on the CT scan was attributed to a large left pneumothorax. Suspected intra-abdominal bleeding due to laceration of the liver and mesenterium led to emergency laparotomy. In spite of the fact that the bleeding from liver laceration was quickly controlled, the patient's hemodynamic situation rapidly deteriorated and cardiac arrest occurred. The chief thoracic surgeon who had been called to the OR to help the operating team immediately suspected cardiac luxation on the CT scan and performed an emergency pericardiectomy from the existing laparotomy. Meanwhile, cardiopulmonary resuscitation was performed for approximately 3 minutes. After repositioning of the heart that was partially dislocated into the left pleural cavity through a 10 cm long pericardial rent, circulation was restored. Left thoracotomy revealed a pericardial tear located posterior to the phrenic nerve running in a vertical direction from the base towards the apex. **DISCUSSION:** Rupture of the pericardium with luxation of the heart is frequently associated with other severe traumatic injuries such as pelvic fractures or internal abdominal lesions, which can mask clinical signs and symptoms. A high index of suspicion is critical for accurate early diagnosis of pericardial rupture.

R148) STUDY OF "BLUNT ABDOMINAL TRAUMA". EVALUATION, MANAGEMENT AND OUTCOME. : Mohammed K. Abdelmaksoud E. A.¹, Ayman S. Nabawi¹, Essam M. Gabr¹, Habashy Abd

El-Basset¹ : 1. Emergency Medicine, ALEXANDRIA UNIVERSITY , Alexandria, Egypt.

Background: Diagnosis of blunt abdominal trauma (BAT) is a real challenge even for the experienced emergency physician (EP). Focused assessment with sonography for trauma (FAST) has become commonplace in the management of blunt abdominal trauma. However, computed tomography (CT) provides more detailed examination of abdominal contents. **Aims:** The objective of our work was to prospectively study the methods of assessment, and processes of management of patients with blunt abdominal trauma admitted to the Emergency Department of the Main University Hospital in Alexandria, the second biggest city in Egypt. **Methods:** This was a prospective study of all blunt abdominal trauma patients who were admitted to the Emergency Department of Alexandria Main University Hospital during a period of six months, starting from September 1, 2007 to March 31, 2008. **Results:** There was a total of 150 cases, and FAST scans were performed in 129 cases (86%). Out of those 129 (86 %) patients, FAST findings were negative in 10 (8%) patients and 119 (79%) patients were positive (48 demonstrated solid organ injury, and 108 free fluid); 36 of these went to have CT scan. Patients, who were unstable with positive FAST, underwent laparotomy. Fifty seven patients underwent conservative treatment in this study with a success rate of 94.7% and only three patients needed an exploratory laparotomy due to haemodynamic instability that developed during the follow-up period. While 93 patients were treated surgically by exploratory laparotomy. The most common surgical procedure was splenectomy. **Conclusions:** Abdominal ultrasonography has proved to be of little value in deciding the possibility of conservative treatment due to inability to detect the grade of solid organ injury. CT scanning of the abdomen is currently the procedure of choice for evaluation of haemodynamically stable patient who has sustained blunt trauma to the abdomen. Today, conservative treatment in a circulatory-stable multiply injured patient is the gold standard of care.

R149) An alternative method for the reduction of anterior shoulder dislocation: the modified Spaso technique : Abdo Sattout¹, Robin Jones¹, John Hollingsworth¹ : 1. Department of Emergency Medicine, University Hospital Aintree, Liverpool, United Kingdom.

INTRODUCTION:

Several methods are used for the reduction of anterior shoulder dislocations in the emergency department. Of these, the Spaso technique is a simple and effective procedure requiring only one operator. Our alternative approach is a comparatively easy and efficient modification of the Spaso technique.

METHODS:

The modification to the Spaso technique requires a single operator, and it consists of applying a gentle vertical traction at the distal arm of the affected side whilst the humeral head is pushed posteriorly (Figure 1).

Our prospective study included patients who attended the emergency department with anterior shoulder dislocation. Exclusion was the presence of any concomitant humeral fracture or significant head injury.

RESULTS:

Seven patients (N=7) presenting with anterior shoulder dislocation were included in the study: 4 males and 3 females had an age ranging from 17 to 83 years (median 33 years). Previous dislocations were reported in 3 patients (42.8%).

There were 5 left-sided (71.4%) and 2 right-sided (28.6%) shoulder dislocations. Time from injury to presentation averaged 101 minutes (range 20 to 240 minutes).

All reductions were performed under sedation using IV Midazolam. The procedure time (measured from the start of sedation until patient was safe to be discharged from the resuscitation area) had a mean of 53 minutes (median 55, range 25 to 75 minutes). Mean manipulation time was 5.3 seconds (range 3 to 8 seconds).

There were no failures of the applied technique, with all dislocation successfully reduced on first attempt (100%). No complications were reported with the procedure.

CONCLUSIONS:

As demonstrated by the results of our study, the modified Spaso technique is a relatively safe, simple and single-operated procedure for the reduction of anterior shoulder dislocations in the emergency department.



Figure 1

Figure 1 illustrates the modified Spaso technique: gentle vertical traction at the distal arm whilst the humeral head is pushed posteriorly with the thumb.

R150) Patients Perspectives on Injuries : Naveed Azam¹, Mark Harrison¹ : 1. James Cook University Hospital, Middlesbrough, United Kingdom.

INTRODUCTION: Communication has always been paramount in Emergency Medicine. Vocabulary and language used in a clinical encounter can profoundly affect the understanding a patient has of their presenting complaint. The aim of our study was to assess the way different terms used to describe a fracture affect the understanding a patient has of that fracture. **METHODS:** A questionnaire was used to gather information in the Emergency Department waiting room at a busy level 1 trauma centre. 100 completed questionnaires were gathered over a 4 month period from April to July 2008 inclusive. **RESULTS:** The patient population found descriptions such as “a broken bone” to be considerably more serious than descriptions such as “a crack in the bone”, which were thought to be rather benign. **CONCLUSION:** This study has shown that there is a very significant difference between what doctors can potentially say and what the patient actually understands. It is important that doctors in the Emergency Department use terminology that is understood by the patient, as well as emphasizing the potential seriousness of the injury.

Severity Of Nomenclatures

	Crack	Break	Fracture	Hairline Fracture	Greenstick Fracture
Mean	3.28	6.64	4.95	3.58	5.28
Standard Deviation	1.91	2.12	2.03	2.70	2.03
Median	3	7	5	3	5

R151) Adverse effect of hydrogen peroxide used as an antiseptic : Jan Thys¹ : 1. Emergency department, UZ Leuven, Leuven, VI-Brabant, Belgium.

BACKGROUND: Hydrogen peroxide (H₂O₂) is widely used as an antiseptic. Many case reports have reported adverse effects of H₂O₂ as the produced oxygen bubbles might migrate to the intravascular space thus causing oxygen embolism. Despite this knowledge H₂O₂ is still widely used. **Aim:** We report a dramatic case of an H₂O₂ adverse effect during neurosurgery resulting in permanent paraplegia. **CASE:** This report uses a case study approach. We report on a female who was anesthetized for a revision of a lumbar arthrodesis. Anesthesia was induced with Propofol 150mg, Sufentanil 10 ug and Atracurium 25 mg IV. After intubation she was ventilated with a mixture of oxygen 40% and Nitrous oxide 60%. At that time all hemodynamic and ventilation parameters were within normal range. She was operated in the ventral position. At the end of the operation the wound was rinsed with diluted H₂O₂. A few minutes afterwards vital parameters suggested a lung embolus probably caused by oxygen bubbles that migrated from the wound to the central circulation. The clinical course deteriorated rapidly with the blood pressure becoming unmeasurable, a tachycardia of

120beats/min and the expired CO₂ assessed by capnometry dropping from normal values to 8 mm Hg. Resuscitation was started with Ephedrine 25 mg IV. All vital signs returned to normal within the next 5 minutes. During the rest of the surgery the clinical course remained stable, yet postoperatively it was observed that the patient had become paraplegic between C 7 and D 5-L 2. This paraplegia did not recuperate despite steroid treatment. The NMR one week later showed total fibrosis of the spine. This was caused by ischemia due to vascular bed blockage by oxygen gas bubbles that had shifted from the right side of the heart to the left, thus causing arterial emboli in the arteries of the central gray matter of the spine. DISCUSSION: Although there have been many reports in the literature, the clinical course and sequela of this reported case have not yet been described. Our case study adds to the evidence base that provides arguments to stop using H₂O₂ in clinical practice.

R152) Severe cutaneous burn injury caused by exposure to liquid ammonia: a case report : Medeni V. Kiyak¹, Mehmet Unaldi², Mustafa Burak Sayhan¹, Ozgür Sogüt³, Recep Demirhan² : 1. Selimiye State Hospital, Department of Emergency Medicine , Edirne, Turkey. 2. Kartal Research and Training Hospital, Department of Emergency Medicine, Istanbul, Turkey. 3. University of Harran, Department of Emergency Medicine, Sanliurfa, Turkey.

BACKGROUND: Ammonia intoxication is uncommon, whereas its potential toxicity is associated with high morbidity and mortality. Herein, we describe a case of severe cutaneous burn wound caused by ammonia. **CASE:** A 32-year-old male, in an attempt to eliminate pain and edema due to a bee sting, placed gauze pads with anhydrous ammonia at the flexor region of right forearm (Figure 1). He had not done any exchange of the pads or dressing of the wound during the next five days. On fifth day, profound third degree burns developed on the area under lesion, and he presented to our emergency department. Wound debridement and antibiotic prophylaxis were administered to the patient for a seven day period. The lesion recovered with a subsequent scar. **DISCUSSION:** The potential for injury depends upon the properties of the chemicals in addition to the thermodynamic effects from exposure to a pressurized substance. The patient's symptoms were more characteristic of a significant thermal injury caused by the rapid expansion and evaporation of a pressurized liquid. Pressurized liquids and gases exert an additional cold thermal injury and this may complicate the clinical situation. **Conclusion:** Patients exposed to pressurized liquids or gases present unique diagnostic and treatment challenges to the Emergency Physician. Therefore emergency medicine department physicians must be aware and able to manage burns.



Reddish edema with third degree burn at the flexor region of right forearm is seen.

R154) Swimming with a cast, dream or reality? : Anne Fontanel¹, Affif Kaddour², Alain Frey³, Vincent Gautier¹ : 1. Service d'Accueil des Urgences, Centre Hospitalier de la Région Annecienne, Sevrier, France. 2. CHRU de Grenoble, Grenoble, France. 3. Centre Hospitalier de Poissy, Paris, France.

INTRODUCTION: On the market exists an under resin padding called Delta-Dry® that is said to be impermeable and authorises total immersion of the resin. We wanted to test this product under real utilisation conditions and evaluate skin conditions after removal. **METHODS:** From June 17th 2008 to January 20th 2009 we performed a multi-center, prospective study. Centres participating were Grenoble, Poissy, Rumilly, Annecy. Inclusion criteria: All patients with a non-surgical lesion immobilised in a resin cast, no age criteria. Exclusion criteria: Surgical lesion, diabetes, skin illness, vascular or neurological illness, open wound, negative reaction to resin, inability to have patient follow-up, patient refusal to participate. Each item was given a score between 1 (very poor) and 5 (excellent). **RESULTS:** 133 patients were included, 50% women and 50% men. Average age: 22 years (median 14, extremes 1.5 and 73). Average treatment time: 27 days (median 28, extremes 4 to 69). Types of lesions: 90% fractures and

10% sprains. Upon application 4(good) or 5 (excellent): Rolling out the band 96%, Shaping around the member 75%, Sticking upon itself 99%, Ease to add pieces 67%, Thickness of padding 98%, Application time 98%, General finished aspect 94%, General opinion about the application 99%. Patient's general feeling about wearing the cast: Comfort 91%, Odour 92%, Itching 76%, Drying after immersion 83%, Patients general impression 94%. Upon removal: General aspect upon removal 79%, Ease of removal 85%, Skin abrasion 93%, Skin maceration 96%, Skin's general aspect 96%, General opinion 97%. All users and 93% of patients said they were ready to use this product again. **CONCLUSION:** The Delta-Dry® product has shown to be easy to use and remove after a short learning period. The product's strength and resistance leaves a feeling of security while using the plaster saw (no risk of cutting the skin). Skin tolerance is excellent and no skin lesions were recorded during our study. Patient satisfaction is excellent and almost everyone would be willing to re-use this product. So Delta-Dry® contributes to patient comfort.

R155) Disposition of Patients Transferred to a Regional Burn Center with Minor Burns : David A. Wald¹, Linda Kruus¹, Gerry Wydro¹, Ernie Yeh¹, Carl Homa¹, William Hughes¹ : 1. Emergency Medicine, Temple University School of Medicine, Philadelphia, PA, USA.

INTRODUCTION: A grading system for burn severity and disposition has been developed by the American Burn Association (ABA). Outpatient management is recommended for patients suffering minor burns. In our study, we report the disposition (admission v. discharge) of cases transferred to a regional burn center with minor burns defined by the ABA. **METHODS:** Two year retrospective chart review of patients transferred to the emergency department (ED) of a regional burn center in a large metropolitan center. All patients were co-managed by the ED and burn care team. The attending burn surgeon determined final disposition. Data collected included patient demographics and burn characteristics. Patients were classified per ABA grading system; minor, moderate, major burns. Associations are presented as odds ratios (OR) with 95% confidence intervals (CI). **RESULTS:** 305 charts were reviewed. Mean patient age was 45+18 years and 69% were male, 48% Caucasian, 28% African American, 10%, Hispanic, 13 4% Asian/Pacific Islander, 10% other/missing. Mean total body surface area (TBSA) partial thickness burn was 8%+5, mean full thickness burn was 6%+4. The two most common causes of burns were contact with a hot object (37%) and scalding (29%). Most common location of burn was patient's residence (59%). Disposition information was available on 302 (99%) patients. Information available to classify patients per ABA grading system was available on 293 (96%) patients. 90 (31%) of patients had a minor burn injury based on the ABA criteria. 47 (52%) patients with minor burns were admitted, 43 (48%) were discharged. Among those classified as a minor burn, TBSA burn was unrelated to final disposition (OR=1.1[1.0-1.3]). **CONCLUSIONS:** Many patients with minor burns are admitted to the hospital. At our center, no correlation was noted between patients with minor burn wounds as defined by the ABA grading system for burn severity and disposition. This suggests that factors other than burn characteristics may play a role in determining disposition for patients with minor burns. Additional research is necessary to identify these factors.